

The Hunger of Time Damien Broderick and Rory Barnes Technology has started to accelerate at a terrifying rate. By mid 21st century, we might see a Singularity: a convergence of artificial intelligence, advanced nanotechnologies for building things at the atomic scale, precise genomics, other wonders. What happens after that? Will the descendents of today's humanity become gods or demons, or simply destroy themselves? And will we be among their number, carried along by rejuvenation and immortality treatments? For Natalie and her irritatingly beautiful young sister Suzanna, these are no longer abstract questions. The familiar world is on the brink of crisis. Dumped by her live-in boyfriend and stuck back at home with her parents, Nat is not a happy person. And her father Hugh is acting like a mad scientist. What the hell is he building out there in the garage? When Hugh frog-marches his family into the garage, it looks as if he's really gone mad, and they're due to perish even before the plague wipes out all life on earth. But the machine Hugh has been working on hurls them all--not forgetting their dog Ferdy--ever farther into the future, and the escapade doesn't stop until the very end of time and space. e-Reads 2003-10 Text/html 0-7592-6600-Xen-us Copyright © 2003 Damien Broderick and Rory Barnes {2411787D-F1FD-4C68-9200-20042AA69F27}

# **The Hunger of Time**

**Damien Broderick and Rory  
Barnes**

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"The hunger of time devours the  
stars"

—Garrett Kalleberg

*To the memory of Poul  
Anderson (1926-2001) Science  
fiction Grand Master for 'Flight  
to Forever'*

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# **Acknowledgments**

Long time readers of science fiction will appreciate why this novel is dedicated with thanks to the late Poul Anderson, in grateful recognition of his decades of fine and often innovative story-telling. One technique he perfected in sf, both in germinal short work like the 1950 classic 'Flight to Forever' and twenty years later the novel *Tau Zero*, is to carry both characters and readers by ever

increasing leaps forward in time. That method has been adapted here, and it was therefore enormously pleasing to hear from Poul not long before his death that he enjoyed what we'd done in the short work that gave rise to this novel.

Thanks, too, especially to Barbara Lamar and Paul Voermans for close readings that materially improved what we'd written, and to Spike Jones, Alex Eremenko, Hal Finney and others who helped work out some of the background details. We are grateful to Anders Sandberg, neuroscientist and artist, for his kindness in allowing us to borrow his evocative rendering for our cover. As always, Damien's thanks for continuing support to the Department of English and Cultural Studies at the University of Melbourne, where he is a Senior Fellow.

Fans of cultural theory will recognize phrases, images and ideas appropriated and tormented from their originals in *The Golden Bough*, W. B. Yeats, Balzac, Samuel R. Delany, James Joyce (*Ulysses* and *Finnegans Wake*), but really none of that matters—it's all for density and fun. The key idea of the Spike, though, is intended perfectly seriously, and is explored at greater length in Damien's *The Spike: How Our Lives are being Transformed by Rapidly Advancing Technology* (New York: Forge, 2001).

- Adelaide and Melbourne Damien Broderick and Rory Barnes

## One

We think we seek ends, but those come to us unbidden. No, what

# we search for, all our lives, are beginnings.

‘Talbot says if the holy war goes on much longer, people will start chucking nukes,’ I told my family. That sounded like the end of the world to me, or a good enough approximation. Still, I bit my tongue, angry at myself. Tal had walked out on me fully three months earlier. Just left me high and dry. So why the hell did the bastard’s miserable little obiter dicta keep popping out of my mouth? Actually I knew why. If a major global conflict really did happen—and the newspaper editorials, not to mention trash television, made it sound certain—the whole world’s burning would somewhat approximate this last year with my ex-boyfriend. I shuddered, and spread canola margarine on another wholemeal roll.

Certainly my father was convinced the world was about to end, and he wasn’t shy about saying so. Grace told him primly that he shouldn’t talk about such morbid topics at the dinner table.

‘I don’t believe in hiding the truth from our daughters,’ Hugh said, ‘no matter how grim it is. That’s how we got into this goddamned fix in the first place.’

‘Hugh, I’d rather you didn’t use that kind of language in front of Suzanna.’ Mom pursed her lips, then grinned and punched him in the arm. ‘With Natalie, of course, you can say whatever you fucking well like.’

She was a great kidder, but I could tell that she really didn’t like any talk about the end of the world. She said it made her nervous and spoiled her appetite. Grace was so lean and muscular from aerobics and Tai Chi classes that she didn’t need to be put off her food, because she always ate twice as much as me, which was saying something even though I’m on an endless diet and, okay, a few pounds overweight. But I don’t care. I’m not a slave to fashion, like Suzanna. That’s my sister, the young beautiful one. And no, I’m not all twisted up with envy and jealousy.

When I was a child, I’d given myself nightmares by skimming the books Father left lying around the living room. Hair-raising stuff from the 1980s when people like Hugh and Grace D’Anzso were expecting to be totaled at any minute. Anyway, that’s the impression you get. Awful, blood-curdling rhetoric. Let the words creep into the back of your mind and nestle there in the night: Ground zero. First strike capability. Hardened targets. Megatons of explosive nastiness in the multiple-warhead nose cones of missiles launched from attack submarines deep under the Arctic ice or cruising the Pacific. Plus the more recent nightmares: monstrous acts of terrorism, genomic engineered viruses, probably, and god knows what the military were doing in their containment labs with nanotechnology.

I’d woken up whimpering that winter morning, too cold to go back to sleep, scrunched up under the non-allergenic comforter. What I wanted was a warm body next to me; I lay shaking in my misery and anger, tears running down my face. It was too early to get up and light the old wood stove. The solar panels weren’t powerful enough, of course, to warm my parents’ house, so all they had were basic services like lighting, television—and the computers, naturally. Cooking and hot water were handled with a blend of 21st century retrofitting—ugly big drums of water to absorb heat during the daylight hours, rational placement of windows and bushes to catch or shade the Sun’s heat—and 19th century tried-and-true. My parents didn’t believe in using the public utilities, like gas and electricity, because you could never tell when the government might decide to turn them off or there could be a drastic oil shortage at any moment. Talbot had agreed for the sake of peace and quiet that these precautions made perfect sense, but my dearest friend Deb often insisted over a cheerful coffee latte and pastry that this

was mad bullshit and I suspected she was probably right, but what would I know? (Ha!)

It still scared me. Other people weren't forced to suffer this urban survivalist crap. Suzanna and I'd had to put up with it since I was small and she was smaller; it had quickly become apparent to me that if other kids' parents took such precautions nobody talked about it in the playground, or after school. On the other hand, Suzanna and I hadn't talked about it much either. It's no fun if everyone thinks you're some crazy loon geek with nutso olds, and when you crawl back to live with them at the age of 23 with your tail between your legs after your guy has taken the Toyota and your best friend to a new apartment, and you think you're going crazy with sorrow, it's even less fun. Still, there were the occasional moments of hilarity in the madness.

'It won't be nuclear, Natalie,' Hugh assured me absently, cutting the leafy head off a green crisp stick of celery and eating it without salt. I know salt is bad for your blood pressure, but I can't stand raw vegetables without at least a bit of salt to bring out the flavor. On my 18th birthday I'd been informed by Grace (graciously, of course) that it was my choice henceforth. I might kill myself by slow poison at her table if that was the way I wanted it, since I was now an adult and got to make such vital decisions without any further interference from them. My dear best friend Deb, my really reliable best friend Debbie, had thought this was big of them, and I guess from their point of view it was a remarkably liberal concession.

'What will it be then?' Suzanna said sulkily, not looking up from her copy of Rolling Stone which featured the Big Spew on the cover. She was twirling one golden springy strand of magical hair with her index finger, and I knew she didn't really care about the end of the world, as long as she got to the Xmas dance with gorgeous Andy Compton who was only a year and a half younger than me for crying out loud, already finishing his engineering degree. What was a hunk like that doing with my kid sister? Why weren't my parents throwing conniptions about the cradle-snatcher?

'Don't encourage him,' Grace said warningly to Suzanna, but it was too late. It was always too late.

'The ozone hole is still on the increase,' Hugh said in his calm, prophetic voice. He never got wildly angry about the end of the world, just relaxed and determined to do something about it and fix the poor goddamned world up, as he'd say, before the jackasses and buffoons ruined it altogether. 'The population explosion might be slowing, but the sheer weight of human numbers is still considerably above the planet's optimal carrying capacity. Genetic engineering of crops is setting us up for the most horrendous food production crash in history, once some mutant insect or viral predator appears and wipes out the cloned crops in one foul swoop—'

'One fool sweep,' I said.

'One fell swoop, dear,' Grace said simultaneously.

'Fell?' said Suzanna. 'How can you swoop if you fell?'

'Fell?' Hugh said. 'I'm talking about factory fowls, all those poor chickens genetically bred for maximum tasteless flesh and big eggs and no brains. One swipe and those fowl are gone.'

I was indignant. 'You didn't say "swipe",' I cried. 'That's a foul!'

By then we were all falling about laughing, and Hugh got a bit of celery caught in his windpipe, and started choking and we stopped talking about the end of civilization as we knew it. But the topic was never far away. It lurked in the shadows at night, in my weepy bereft dreams, and our parents made their strange plans during the day, although Suzie and I actually knew nothing about that, even if we suspected that something pretty disturbing was afoot.



Hugh had sold the Subaru sedan a couple of months ago, which was one of his more insane moves. He claimed the family didn't need three cars, since the Ferguson Institute was within walking distance and Grace worked at home. Not long after Hugh did this mad thing, my ancient Fiat bit the dust and Tal decided he was rightful owner of our Toyota (okay, he'd paid the deposit and it was registered in his name, but I'd dutifully shelled out half the monthly installments), or at any rate that his need was greater, so we were down to Grace's sturdy old Volvo. It sat in the drive when I wasn't using it to drop Suzanna by school and get myself to work.

Nonetheless, Hugh started securing the old-fashioned wooden doors of the garage with a heavy chain and lock. I knew there wasn't anything inside except for all the usual tools neatly lined up along one wall in the wooden shelves that Hugh had built to hold them when we moved into the house five years earlier, a bit after Suzanna's twelfth birthday, hammers and wrenches and cans for nails and screws in various sizes and handyman lengths of timber and metal pipe strung overhead out of the way, and along the back wall a rack of electronic gadgets with dials and monitor screens torn out of obsolete computers and wired together and none of us had the slightest idea what it was all for, except that Hugh refused to let us touch any of it. I had the idea, or maybe the romantic delusion, that he'd wanted to be a freelance inventor when he was a boy, but had to give up his dream when he married Grace and quite soon found himself saddled, perhaps to his surprise, with an expensive daughter and then, a few years later, with another. Luckily they came to their senses and stopped at that point.

But doing a Fort Knox on the garage was not what bothered me, not per se, I'd had plenty of time to get used to Hugh's little eccentricities. Besides, Tal had explained to me that men prefer to have a redoubt of their own, well away from the domesticity of the household, especially one infested with three women. (Double ha!) It had started earlier than that, when the crazy man bolted on a substantial lock inside the garage doors.

Grace had put up a fight when that bolt was first screwed into place, saying that one of us might lock ourselves in and then faint from chemical fumes or hit our head and no-one would be able to retrieve us, and dear rational Daddy pointed out that this was a wildly unlikely eventuality since Suzanna and I were hardly children any longer.

Grace exploded. 'Of course they are not kids any more, Hugh. I have observed my own daughters growing up.'

'Well, then—'

Hugh seemed to think he'd won the argument. And in a way he had. Mom just said, 'Oh for heaven's sake, Hugh,' and left the room looking angry.

The point was, of course, that she couldn't bring herself to express what she was really feeling. Or, at least, she couldn't say it in front of us. Pretty weird for a card-carrying feminist of the old school, but somehow I'd managed to assimilate this behavior without questioning it deeply. What she really felt, I saw now, was the same thing that I felt: Hugh was starting to act batshit. Grace hated the idea of the bolt on the inside of the garage door because it was frankly insane. Who'd want to lock himself into an empty garage? Some sort of raving fruitcake, it seemed to me.

I tried to raise the matter with her that evening. She was helping me with some loan amortization calculations I'd been having trouble with. I had been studying fairly ineptly for my realtor's exams, using an old HP 12C calculator of Dad's. Grace is a whiz at math; her Ph.D. was computer science, but she could add and subtract without using either her fingers or an abacus. Me, I can handle the greater and lesser obscurities of Jacques Derrida, Paul De Man and Edward Said, but I could never get my head around a simple calculator. We were alone, sitting at the kitchen table, which years ago had been one of

my favorite places for doing homework, and the ambience remained comforting. Grace was wearing warm-ups, loose and comfortable, the kind of easy clothing she always wore around the house. On the rare occasions when she went to a publisher's office, she groaned but reluctantly did herself up, so she left the house looking like one of those classy blonde anchor women on the news. You could tell in an instant that Suzanna was her daughter, and I was Hugh's. Ah well, the mysteries of the genes—which was one of Mom's other technical interests, since her thesis work had been in supercomputer computation that ultimately fed into the Human Proteomics Project. I shook the machine in frustration.

'This thing must be defective, Grace.' In a minimal attempt to salvage my dignity after retreating to the ancestral home, I'd taken to using her given name, something I'd done as a small child then abandoned when I found it didn't upset her. 'Look. I put in 12 plus 5 and it says 252.20.' I felt like throwing the damned thing through the window.

'Relax, Natalie. The HP 12C uses reverse Polish notation. That means you have to load your first number.' Grace calmly entered the number twelve. 'Then you put in your second number. Now you tell the calculator what operation to perform.' She touched the plus sign. Looking over her shoulder, I saw the number seventeen on the display. Oh. Feeling like a fool, I scribbled it down, then took a deep breath. Carefully, I said, 'Mom, don't you think Dad's maybe a bit, well, you know, obsessed—like with the bolt on the garage door...' I trailed off.

'No, I don't think your father is obsessed. He's just...' Grace paused, laid down her pen, obviously looking for the right word, the safe word. 'He's just cautious.'

I made a farting noise. 'Give me a break. There's nothing cautious about a bolt on the inside of the garage door. It's absurd. Does he think the car's going to escape? Oh no, that's right—no car any longer.'

I could tell Grace was about to deny that there was anything out of the ordinary about Hugh's antics, but she seemed to check herself. 'Hugh sees the world in a different light,' she said. 'Everyone sees the world differently. You'll get over Talbot and Deb sooner or later, Nat, and you'll fall in love again—'

I repeated the noise.

'And you'll find that your partner, that lucky man, whoever he is, never quite sees things the way you do. Then you'll have children and sometimes they'll seem like aliens from outer space, their values and their outlook on life will be so strange. Part of it's genetics. Some genes that express themselves in you can be recessive in your parents—'

'Mom, I might be a klutz with a calculator, but I do know—'

Imperturbably, she went on: 'So you really inherit less than half your personality from each parent, at least of what's visible in them. And there are between thirty and fifty thousand genes, and they interact with each other in strange ways. It's a wonder we get on with each other as well as we do.'

I was enthralled, actually. While I'd never been terribly good at most of my math and physics and chemistry classes, not as good as Suzanna anyway, I love this weird science stuff. Grace told me about studies of identical twins separated at birth; it didn't seem to matter how different the environments were in which the twins were brought up, they managed to turn out remarkably similar. I could have listened all night—she's really entrancing when she gets going on something she knows a lot about. But all this talk about twins and clones and genotypes and phenotypes was getting away from the problem of Hugh's behavior and my mother's compliance with it. I interrupted her.

'About it being a wonder that we get on with each other, I think you get on with Daddy as well as you

do,’ I said in a rush, ‘because you don’t contradict him very much.’

‘Of course I do,’ Grace said, taken aback. ‘I’m always telling Hugh he’s wrong about things.’

‘I know,’ I said, ‘You tell him he is wrong and then he just claims that he’s right. And then you don’t say anything more, you don’t argue.’

She sighed, and took our cups and plates to the sink to soak, since we don’t have a dishwasher. ‘You might be right, Nat. I deliberately chose not stress the argumentative side of my personality. When I was a kid, I was always in deep shit of one kind or another. Staying detached helped me get through my math degrees at a time when girls weren’t encouraged to use their brains that way. The cost, admittedly, was unpleasant. However,’ she said with a pained frown, ‘I think I’d rather defer this conversation for now, darling. You’ve got to get all those really exciting numbers written down neatly or they’ll take away your skeleton key.’ And off she went to her computer to do some editorial work on some bigwig’s text book, leaving me wrestling with reverse Polish notation and the carpet to order for a room 14 ft. x 20 ft. and amortization payments on 30 year loans.

I watched her for several weeks to see if my subtle pep talk had given her pause, but if she took to arguing with her husband, about the lock on the garage or anything else, it wasn’t when Suzanna and I were present.



There’s a small dirty window high in the rear of the garage that’s obviously been nailed shut for years, covered in grime and strands of spiderweb. It was too inconvenient to climb up to from the inside and clean, and Hugh had powerful fluoro-lamps on his benches so he didn’t care that there wasn’t any external light in the garage when he shut the door. But I’d discovered something odd, shortly before I was permitted to gorge myself on salt if that was my chosen pleasure, when I clambered up with a sponge and pail of water to wash the dusty photovoltaic solar array mounted on the old outhouse built on the back of the wood shed behind the garage.

That should have been Suzanna’s job, since she was lighter and nimbler, but she’d explained so convincingly that she was such a frail and artistic type that the chore fell to me, as usual. Grumbling and covered in suds, I noticed one time that I could lean over upside down and, without quite falling to my death, peek in through this little spyhole and watch my father at work on his inventions. He never caught me at it, probably because I only tried it a few times, and there was nothing much to see anyway, just this tall stocky balding man bent over a workbench watching fractal patterns in gorgeous light on his monitors and typing in code on his work station. Dull, really dull.

What made me climb up and peek in the day he disappeared? Some special gleam in Hugh’s eye, I guess, some sense I caught of his intense suppressed excitement. He got in a little early from work, light still in the hazy autumn sky. Grace had just arrived home herself after an afternoon meeting with the publishers and had gone off to get into something more sloppy. Suzanna was in her room, and I had my heels up on the kitchen table with Kylie-sings-Eminem on the radio and a book about zoning restrictions under my nose. Hugh grunted a form of greeting, slung his jacket over the back of his chair, swigged down some filtered water, and left the kitchen. As I say, there was something about Hugh’s expression that made me particularly curious. I heard him unlock the garage, open the doors just enough to squeak in, and push them shut from the inside—with a distinct click of the inner bolt being snibbed.

I went and stood outside watching the garage light. You could see it shining through the hairline cracks

and gleaming through the high little window at the side. I heard my mother come in to the kitchen, switch radio stations to some horrible Golden Oldies station, and start rattling some crockery for dinner. I scaled the old outhouse and skinned over and stuck one eye against the dusty glass and looked down into the garage and no-one was there.

I mean it. The garage was completely empty, but the doors were bolted tight.

That gave me a small fright, because it meant he'd gone out again while I was climbing up on the roof of the shed, and when he crossed the back-yard to go inside the house he'd probably see my big ass stuck out over mid-air, if he paused to glance over his shoulder, and have a conniption and order me down and roust me for endangering my life & limb, climbing in this light, what's the matter with you, young woman, they allow people like you to vote, haven't you got more sense than that? I wriggled back, breathing hard, and got down with only one painful graze on my knee, and strolled into the house with a negligent air and the look, I hoped, of a young artist enjoying the evening air and the garden views.

Hugh wasn't in the kitchen. Suzanna was twanging away in her room on the electric guitar she'd borrowed from school, which always sounded to me more like an industrial accident than the latest in retro acid Goth ska or whatever the child liked to think she was playing. She only did it to make herself attractive to goddamned Andy Compton. Grace was peeling avocados for a guacamole dip, ignoring the horrible racket, and asked without looking up, 'Was that your father coming in just now, darling?'

'He went out back.' I grabbed half an apple out of the fridge and a bowl of ice-cream from the freezer and three muesli biscuits.

'Nat, don't spoil your appetite, dinner won't be long. Sold any mansions today?'

'Ha. If only. They don't let us rookies do the exciting face-to-face stuff. Credit this if you will—they wanted us all to do aerobics at the gym. They'll have us singing a company anthem next.'

Grace shot me a look implying that I might do worse than aerobics. 'And?'

'Fat chance. I laughed at them in a heavily wheezy way.' I get asthma and for the whole of high school carried a doctor's certificate to spare me the boring two hours every week when all the other hearty creatures pounded around the cinder track in their Reeboks or pumped iron to make their sleek bodies even more beautiful, hoping to become stars of Sexe Island or whatever was the flavor of the month. I'm the artistic type, as I said, and prefer to exercise my mind (by taking a snooze in the back office—there really just aren't enough sleeping hours in the day for a young career person on the way up, if you ask me).

I put out the cutlery, plates and glasses, and slouched off to the living room to watch junk TV, expecting to find my father already sitting in his favorite armchair reading some fat book about the hidden perils of the green revolution or the promise of aquaculture in the Third World or the evils of nuclear power. He wasn't there, and shortly thereafter I found he wasn't in the upstairs bathroom when I headed that way for a quick pre-dinner wash-up because Suzanna was in there in a foul fog of her own making. I grimaced, and held my nose. It had to be the junk food she gobbled on her way home from school. Mmm, junk food. So where was the annoying man?

Ferdinand the dog started barking like a lunatic out the front, and I went to the door to haul him inside. He goes for the neighbor's calico cat if the stupid thing is stupid enough to wander stupidly into Ferdy's path, which it does all the time, being as thick as a brick. But Mrs. Mahoney detests this amusing custom, and I suppose I can't blame her, although I'm sure Ferdinand would never actually eat the cat. Heaven knows, he's had plenty of opportunity to do so, because as I might have mentioned the cat is peculiarly stupid. Ferdy never bothered Talbot's cats, Mrs. Grundy and Daily Alice, when Suzanna brought him to

visit our apartment.

I had to call three times and then go and grab the animal by the hairy scruff of his mongrel unpedigreed neck before he'd leave the shrubbery alone. I was halfway back to the front door when I realized that Hugh really wasn't anywhere to be seen, and the last of the light had faded from the sky. Maybe he was walking briskly to the store for a new bottle of cider vinegar for Mom's avocado dip.

No, actually. He was just... gone.

He wouldn't be back for three weeks, although we didn't know that. Twenty-five days and six hours, 31 minutes and 41 seconds, to be exact.

## Two

Grace was frantic, of course, and so were Suzie and I. Once I'd explained about Hugh's visit to the garage, and how he'd locked the door from the inside, Mom became convinced that he'd fallen and hurt himself and was even now lying inside there in a pool of blood, unable to cry feebly for help. Perhaps he was dying. Perhaps—she was really

panicking by now—perhaps he was already dead. Suzie started to weep, and Grace got a grip and said that was very unlikely, your father is a highly competent individual, and I said we could break the little window and climb in if we borrowed the long extension ladder from Mr. Mahoney if his wife would let us in the front gate (Hugh's extension ladder, of course, being locked inside the garage with him because you don't leave a ladder lying around outside where thieves and burglars might find

it—conveniently for them but not for you—and use it to enter your home and rob you blind).

This plan was not regarded favorably, and eventually a man came around from the locksmiths' at prodigious after-hours expense to use his skeleton key (something I didn't possess) to undo the lock to the garage door and was quite dumbfounded when he finally grasped, as we'd been telling him incessantly, that in this case the doors were bolted from the inside. He went away and returned with a long aluminum extension ladder of his own and climbed up and peered in through my little secret window and plainly saw the truth of what I'd been telling them all along—the place was completely empty. No father. Certainly no car, which we knew already. Just some lights flickering on makeshift consoles.

'He's gone down into the cellar,' the locksmith told Grace. 'The trapdoor must have slammed shut on top of him. He might be lying at the bottom of the steps with a serious head wound.' He looked thoughtful in a grisly way. 'I'll bet that's what's happened.'

Suzanna started sobbing noisily again, and Mom put a comforting arm around her shoulders. Dresden china, you know the type: she's an emotional creature. I could feel my own lip trembling too, but I swore I wouldn't cry and make a fool of myself, and I didn't.

'We haven't got a cellar,' Grace told him, and simultaneously I said, 'What cellar?'

'Well, there isn't any other way out, is there?' The locksmith shined his flashlight up and down the outside wall of the garage, which had no opening except for the grimy little window which obviously hadn't been opened in years. We all trooped around to the outhouse and shed at the back, and banged on the wall separating it from the rear of the garage, but no secret entrance-way sprang open. I went back up on the roof, but nothing had been disturbed, the solar cells still perched there darkly—he hadn't made his getaway up through the ceiling, unless he was a slicker escapologist than Houdini.

In a ragged line, we went to ring the bell of the Mahoneys, asked if we could go down along their side fence, which was right next to the remaining wall of the garage, received their grudging and slightly poisonous assent, and of course there was no hidden door or anything of the sort there either.

'We'll have to break the glass,' the locksmith decided. 'Have to go in and to look for the cellar.' Naturally, though, he was forbidden by his union rules from performing such a dangerous specialized climb and descent. He plucked out his cell phone and called some other guy from Emergency Services. About three hours later, long after the sky had turned as black as it ever gets when all the street lights are on and we were all absolutely starving and shivering in the cold evening air, a fat man in overalls and a thin man in overalls arrived in a large official van with flashing orange lights on top. The skinny man cut a smooth round-cornered square with a diamond tool and drew out the glass using a kind of plumber's helper rubber suction-gadget he'd jammed against the glass before he started cutting. Suzanna was enthralled. Gingerly, he went in through the de-glassed window frame.

He didn't find anything either, but at least he opened the bolt and let us all swarm in to switch on the fluoros, peer at every square inch of the floor, sniff at the old oil stain on the concrete slab, peer under benches, rap on walls. They even brought in an A-shaped aluminum ladder from the truck and the fat

man in overalls heaved himself up it, breathing heavily and muttering about this had better be better than time-and-a-half overtime because he was missing the X-Files classic repeats, and probed at the ceiling. Nothing moved, although he did bang his ear painfully on one of Hugh's lengths of handyman timber.

'Fuck!'

Grace said, 'Sir, you really shouldn't use such language in the presence of young unmarried women.' He blushed. I pulled a face at her behind his back.

The awful, unthinkable fact remained: the cupboard was bare. Hugh really had gone.

'It's like the Marie Celeste,' said the skinny man in a cadaverous whisper. 'This will probably be made into an episode of Famous Unsolved Mysteries.'

Suzanna wailed, and Grace gave the idiot a venomous look. 'I'm sure the Mystery will be Solved, and quite soon, thank you very much.'

'Mary,' I said, equally venomously, staring at the man through slitted eyes.

'What?' he said, startled. His fat companion was lugging the aluminum ladder out again, banging it noisily on the now-open doors. 'I'm not Maury, that's the shift-supervisor.'

'Mary,' I said again. 'Mary Celeste. That's the correct name of the ship where all the crew disappeared and they found it later floating all forlorn, without any explanation for the missing people. Oh shut up, Suzanna.' But then I started crying myself, and the men closed the doors on the empty garage but didn't put the chain up or lock it, which was just as well as it turned out, and Grace rounded us all up and took us in belatedly to dinner and we tried to console ourselves with an old Mel Gibson video but by that time our hearts really weren't in it. I went to bed and read some Harold Bloom for old times' sake. If you traveled the world seeking literary sages to put you right on the relationship between cultural theory and reality, almost the last place you'd bother with would be Yale, where golden boys once cavorted with Y's on their breasts and until recently the expiring tentacles of textual empire could be seen threshing away through the office windows of Jacques Derrida, on frequent loan from Paris, Geoffrey Hartman, Harold Bloom and J. Hillis Miller. But I liked one thing Bloom had to say, which had encouraged me during the arid stretches of my dissertation: 'Reading, writing, teaching, being taught: the experience of literature is the experience of an isolate and solipsizing glory... It is the greatest and most superb of narcissistic self-indulgences: and why should it not be?' Only one drawback with that theory: there's not a lot of money to be made at it. Not as much, at any rate, as in real estate, which is as real as you can get. Once you pass the exams.

Two nights later, after I got home from work, three police officers came around and went through it all again, but with less enthusiasm. 'Domestic,' I heard one of them say. A young policewoman took Grace in to the living room and sat her down for a private chat, and I heard Mom's voice get very sharp and perhaps angry, although she hardly ever lost her temper. The policewoman emerged a few minutes later with little red flushed spots in her cheeks, anger of her own or perhaps embarrassment, I couldn't tell.

On the third day Grace finally got it together enough to return to work (have I mentioned that she's a freelance text editor, which might be where I get those bookish genes from?) and turned on her computer to get her email messages. There was a queued post waiting for her from Hugh, sent to her on the afternoon of the day he'd vanished. Whatever it was that he'd sent her calmed her down immediately, but she wouldn't tell us where he'd gone or why.

'It's all right, girls,' she said, brushing Suzie's beautiful blonde hair while my sister sat on the floor on a cushion in front of her. 'Your father is perfectly safe. It was all my fault for not looking at my in-box



before I let everything get out of hand.'

I didn't think it was her fault at all. I thought it was one more proof of how ratty Daddy had become in the last year or two. I loved him, of course, but sometimes I got frightened by his intensity and his thoughtlessness. This was a prime example. How could the man just up and leave for... well, what turned out to be three entire weeks, although we didn't know that then... without explaining his plans? Didn't he have a clue how upset we'd be? Didn't he know how this heedless vanishment would tear my heart, so close to Talbot's desertion?

Maybe he did. He just had different priorities. After all, he believed that he and the family might be the last people left on earth following the catastrophe that he was convinced would very probably erupt any day.

And then at nearly midnight three and a half weeks later he walked quickly in from the back yard, after we'd heard a screech of metal as the garage doors opened from the inside and the metal chain fell to the concrete driveway, and he stepped briskly into the kitchen. We'd taken to dozing late with Mom in front of the TV, wrapped in blankets, flipping numbly from one news program to the next, finally getting to sleep anywhere between eleven at night and one in the morning, then waking convulsively at first light. This wasn't doing our mental health or Suzanna's school marks much good, but I could tell Grace was quietly devastated, despite her assurances, and needed our company. Suzie and I were gulping down our late-night OJ and muesli-cake snack before finally heading off to bed, but from the look of Hugh as he came in you'd have sworn he'd just come back from a quick amble about the garden checking the organic produce, never mind being away in limbo for the best part of a month.

Grace gave a hugely deep, relieved sigh, which showed me how much strain she'd really been under despite her claims to the contrary, and put her arms around Hugh and hugged him as hard as I've ever seen anyone hug anyone else. Suzanna gave a shriek and dropped her orange juice and the glass shattered on the cork tile, and I reached down to pick up the broken pieces of the glass and cut my thumb quite badly, and then everyone was everywhere, mopping up OJ and blood and hugging and I started crying again, with the sting of my hand and the bitter confusion of my feelings and my happiness at seeing the patriarch home and okay.

Of course, being Hugh, he didn't explain what he'd been up to, or where he'd been, or how he'd got out of the locked garage three weeks earlier, or how he'd got back in from wherever he'd gone. I assumed Grace knew, and was okay with it, but had no idea what he told the police when he went around to report that he wasn't, after all, missing. It was just an amazing conundrum, and you had to put up with it, because that's the sort of guy he was. The weird, weird sort.

Thereafter he kept up his nightly visits to the garage, the evening-to-midnight tireless fiddling with his mysterious gadgets and circuits. His face grew more and more drawn, and whenever he watched the television news his mood grew ever more bleak; he would shake his head and mutter about the world coming to an end.

\* \* \* \*

And then the world did come to end, and we were the only ones totally prepared for it.

## Three

The world we knew ended at seven twenty on Thursday evening. We were just about ready to sit down to eat in front of the television. Grace had drifted in from the kitchen to watch the weather report which would be on in about five minutes. She didn't get to see it, because the moment the newsreader said, 'Here's Mike Wallace with all the sports news,' Hugh flicked the remote. The screen went dead. Looking very bleakly at Mom, he said,

‘Well, that’s it, time to quit.’  
Grace gave him an unreadable look in reply and then, to my amazement, without a word, left the room and went into the kitchen. By the sound of things, she started busying herself in the open-shelved pantry.

‘Hey, Dad!’ Suzanna said, annoyed, ‘I want to know if the Broncos beat the Green Shirts.’ When she reached across for the remote, he pushed it impatiently away from her hand.

‘It doesn’t matter who beat whom,’ Hugh told us. ‘The world’s effectively at an end.’

‘What madness is this?’ Suzanna said, ‘The world’s doing all right. I want to know about the Broncos.’

‘You saw the news,’ Hugh said. ‘It’s all over.’

‘What’s all over?’ I asked him, completely bemused. I hadn’t been watching closely, but nothing terribly earth-shattering had been mentioned, I was sure of it. No asteroid headed our way to wipe out the dinosaurs, no nuclear war imminent.

‘That virus in Manila is spreading exponentially,’ he said. ‘For every thousand people who’ve got it today, ten thousand will have it next week. The week after that, one hundred thousand. Do the calculations. Two to what power makes six billion?’

‘Huh?’

‘Don’t grunt inarticulately, darling, it’s not attractive. Think. Two to the ten is...?’

I screwed up my face. What on earth was Hugh on about now? Oh. Hang on. Two squared is four, two cubed is eight, and that’s the same as saying two to the two and two to the three, so two-to-the-ten means two multiplied by itself ten times— How was I supposed to know the answer to that? I tried to do it in my head, using my fingers to keep count of the doublings, hiding my hands behind my back. Two twos are 4, then 8, 16, blah blah, two hundred and something, 248? No, don’t be stupid, woman, 256, and what doubling point had we got to...? My mind shut down and my tight fingers sprang open. I never do well on mental arithmetic and those stupid tests. I mean, that’s why God gave us reverse Polish

calculators, isn't it?

'One K, obviously,' said my irritating sister. 'One thousand and twenty-four.'

'Exactly.' Hugh beamed at her. 'Two to the tenth power is 1024. Call it a thousand, approximately. So two to the twentieth power is a million, because that's just two to the tenth power squared, and two to the thirtieth power is a billion, and since the whole world's human population is only six times that many, a virus that spreads from one person to another like wildfire can infect the entire planet's population in just over thirty jumps. That's been true since every place got connected by jet airliners to every other place—it wasn't so fast once, when diseases took months or years to reach another continent.' He paused and regarded us very, very seriously. 'Even if each doubling jump of the Manila plague takes a week or ten days, the whole planet could be dying in less than a year.'

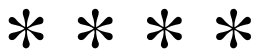
'Theory, shmear. What's all that got to do with anything real?' said Suzanna, looking as if she didn't have a care in the world. 'The virus is restricted to the Philippines, they said so on the news. Quarantine, all that.' I was impressed, I'd missed that report because I was helping with the salad but it didn't seem like the sort of thing Suzie would care about. 'I mean, sure, it's sad for all the poor Filipinos and everything—but that's no reason why the rest of us can't watch the Broncos pulverize the Green Shirts.'

'The world's one big village,' Hugh said, 'you know that, Suzanna. What affects the Philippines now will affect everybody in a few months, as I just demonstrated. It's time to quit.'

'Quit what?' I said. 'Quit watching sports? How's that going to save us from the Manila Flu?'

'It's time to quit the world,' he said. 'Everyone into the garage.'

I suddenly felt very cold inside, as if I'd just had a freezing bucket of water thrown over me.



I'd seen the footage. I'd watched enough television, read enough social theory. I knew about weird cults and anomie, I knew about the Jonestown suicides, and the poor self-castrating Heaven's Gate loons and the Waco Dravidians and the Jihad suiciders. And I'd listened to Hugh going on about how stupid and gullible they all were. Of course, I agreed with him, although sometimes I wondered why he was so obsessed. I mean, aside from the terrorists what's it matter to us if some lunatic decides that he is going to lead his chosen Darwin Award flock into paradise? Why should we care if they get so worked up that they gulp down the poison while yodeling to their gods? Presto, they're reborn in a new world. Except that when you see the footage, when you see all the dead disciples lying round the poison tubs with their Styrofoam beakers of funny cordial all spilled on the ground, you know they haven't gone to some better place, they haven't gone to another planet. They're dead because the head maniac has induced a disgusting mass hysteria. They are dead because they were foolish enough to allow themselves to be brainwashed to the point where their brains weren't just stripped of any sensible thoughts but rinsed and spun dried and hung out in the sun. Any fool knows this, I knew it, certainly Grace did. So why did Hugh get so obsessed by these post-millenarian cults? And what was this crap about quitting the world? Because, quite frankly, I was no millenarian disciple, I was Natalie D'Anzso and sure as shit wasn't quitting this world just because the television screen showed a few horror pictures of a flu epidemic in the Philippines.

I looked across at Hugh, my skin chilly. He was very serious. He was talking earnestly, rationally, reasonably. And I don't trust serious, rational, reasonable people. I don't trust them at all. Even my own father. I trust people who smile and tell jokes (which my father did too, quite a lot of the time, when he

was being the Good Father instead of the Remote and Scary Bad Father). I trust people who take the world and its flu epidemics and its pathological fear of salt with, like, a grain or two of salt.

This time it was the Bad Father, and it scared me badly. He just said flatly, 'All right, everybody can bring one item of a personal nature. A photograph, or a soft toy, or a favorite book. But there's no need to drag the whole house in. Everything we need for our journey has already been loaded.'

'Loaded where?' I said, staying put in my chair, not budging a muscle. 'We haven't got a car. You sold it, remember? There's nothing in the garage.'

'Don't argue, Nat,' Hugh said. 'We are leaving now. Everybody into the garage.'

Look, this is my own father we are talking about. My own flesh and blood. But I swear, I had this vision: four shotgun blasts and we were all in cultist lunatic heaven. And heaven help the poor cops and paramedics this time, called by the shocked Mahoneys, who would break down the garage door and cart away our earthly remains. I said as quietly and as reasonably as I could, 'It's okay, Hugh, we don't have to leave right now. Tomorrow will do. The epidemic is still in the Philippines. Even with exponential growth it's not going to arrive here tonight.'

'I said not to argue, Nat. Everyone into the garage, now.'

I looked at Grace. I thought, Maybe she'll be able to stop Hugh from marching us all to our doom in the empty garage. But Mom didn't say a word. You could sense that she knew it was impossible to argue with him. She wasn't saying anything wry about not being morbid or not talking about the end of the world in front of the children. Without a word of dissent, she got quietly to her feet, gave Hugh another look I couldn't read, nodded again, and returned to the kitchen, where to my total disbelief it sounded as if she had decided to empty out the fridge and give it a good Spring-clean. In the middle of winter.

Time to make a run for it. Once I was out of the house and into the night, there'd be no catching me. But I wasn't going to run away alone, I wasn't leaving without my sister. I tried to catch Suzanna's eye, but Suzanna was oblivious to what was going on. She'd decided to switch the TV back on, clearly determined to see the Broncos' clash. She knew better than to try to grab the remote out of Hugh's hand, so she stood up and went to the set and started fiddling with the switches. The sports report came on. Hugh didn't say anything. He walked up behind Suzanna and put his arms round her waist and picked her up as if she were a seven-year-old, not a decade older, and started carrying her in the direction of the door that leads out into the garden, near the garage. Suzanna yelled and said, 'Put me down, Hugh, you big oaf.' But she said it in fun. She giggled. She had no idea what was happening.

I watched my sister being carted off. Grace came back in with a huge picnic basket full of what looked like most of the food from the fridge—assorted cheeses and a couple of dark green crinkly mignonette lettuces in plastic clingwrap, and Lebanese cucumbers and the half chicken left over from the night before and a whole frozen chicken from the freezer section, and a huge ham-bone, and some tomatoes, and heaven knows what else under all that. She followed Hugh and Suzie out into the back yard.

'Mom!' I yelled. I was numb. The air had congealed. It was as if she didn't hear me. I stood there with my mouth open, terrified. The end of the sports news was still muttering on the television, something about the Broncos having licked the Green Jocks or some crap. I heard the door to the garage opening. I swung round, unable to make up my mind, to grasp what was going on. The front door and the safety of the night were ahead of me, and my mad, dangerous father behind. (Or was he mad and dangerous? You can't suddenly decide your sober middle-aged father's turned into a secret axe-murderer, can you? But some fathers do.) I couldn't move, couldn't make my get-away, couldn't leave Suzanna. I couldn't leave Mom. And the funny thing was—though it didn't seem funny at all—I couldn't leave Hugh. I turned again

and walked out of the empty house after them to the garage.

Ferdinand almost knocked me over, rushing from the back of the yard where he'd been posted in his secret sentry duty patrolling the movements of the calico cat.

'Oh, you hairy fool,' I yelled, and crouched down to hug him wildly against my chest. His long salt-and-pepper hairs stuck to my shirt, and he panted with delight. I looked into his brown eyes with tears in my own, and saw a brief horrid future flash of the poor beast whining over our stiff, dead bodies in the darkness of the garage. Ferdy barked right in my ear then, nearly deafening me, and gave me a huge slurpy loving lick up the right side of face and in my eye. I couldn't help laughing, jerking back and swiping at my face with my sleeve, and Hugh called out in quite a sane, friendly voice, 'Nat, will you please round up that damned cat-chewing pest and bring him in here pronto. Time for us all to get a move on.'

So I did, believe it or not. People do what they're told during hold-ups, I'm told. They follow torturers' instruction to the letter. In concentration camps they trot along like little cowed sheep, hoping for the best when every shrieking nerve in their body and brain tells them they are confronting the worst. Ferdinand followed me into the blaze of light from all the bench lights activated simultaneously, and we stared together, woman and dog, with absolute astonishment, at the impossible thing looming in the garage, the thing swallowing the entire back wall like a vast lump of ancient solidified lava that had cooled and hardened there about five million years before humans had first arrived, footsore and freezing, on this continent.

## Four

'What the fuck,' I said, 'is that?'

'It's our salvation from the plague,' Hugh said.

'It's a lump of rock,' I said. 'How did it get here?'

Suzanna said, 'Put me down.' She'd stopped giggling and wriggling and pretending she didn't want to be carried about by Daddy. Trust me, she now seriously wanted down. Hugh didn't say anything, just set her down on her feet. My sister looked at the rock. I looked at the huge absurd rock. Grace put her basket of provisions down and smiled.

'How did you get it in?' I said.

'I didn't,' my father said. 'Nobody got it in.' Which was the most preposterous thing I'd ever heard anybody say.

'Don't tell me the damn rock just rolled into the garage from nowhere. You'd need a crane.' Really I couldn't take it in; it was too... ridiculous. Words like 'anomalous' don't even start to do it justice. Imagine opening your refrigerator and finding it jammed with tropical fish, all swimming around. Or a very large accurate ice-cream sculpture of the Eiffel Tower. Or a monkey circling on a bicycle. I don't know. It was preposterous and impossible, that's all.

'It'll be our salvation,' Hugh said again.

‘Please stop saying that,’ I said. ‘What are we going to do, eat it?’

‘Stone Soup,’ Suzanna said in a grating voice.

‘Ha, ha,’ I said. But nobody laughed.

Ferdinand ran up to the impossible rock surface, scratching at it with his paws. You’d have thought he was trying to burrow inside the horrid thing. He wasn’t remotely worried; he behaved as if there had always been a great congealed lava flow at the back of the garage. Dogs, I thought, are meant to be sensitive creatures. Hugh walked over to a bench and picked up a remote—a perfectly ordinary remote, something you’d point at the video or the sound system. He pointed it at the rock, where Ferdinand pawed at the glassy surface. Hugh frowned and pressed a button. Ferdinand’s right paw disappeared into the rock, then his left paw, then his snout. The remainder of the dog bounded—bounded!—into the rock wall and was lost instantly from sight.

‘It’s his favorite place,’ my father said calmly. ‘He loves it in there.’

I didn’t say anything. I was speechless. Suzanna was speechless. With a resigned shrug, Grace said, ‘Well, Ferdinand is a sensible dog. If it’s good enough for him, it’s good enough for me.’ She picked up her basket of food and stepped toward the rock.

‘Mom!’ I screeched. ‘For god’s sake—’

Suzanna didn’t bother with the usual yells or screams or instant panicky hysteria. She darted forward and grabbed Mom’s free hand, tried to haul her bodily backwards. Grace laughed, although it sounded like a nervous laugh to me, and swung the heavy basket of food at the rock and the basket disappeared for a moment and reappeared on the back swing. ‘In we go,’ Grace said and walked straight through the rock, basket and all.

This time Suzanna did scream, but she didn’t let go of Grace’s hand. A sickeningly surreal tug of war started. Nothing more than my mother’s free arm was jutting from the rock as Suzanna pulled with all her might. Obviously Mom’s arm was pulling in the other direction, and she was stronger than my sister. I watched Suzie disappear into the impossible rock. She was gone. Swallowed up.

I gasped, feeling sick and dizzy. Hugh made shooing motions with the hand holding the remote, said, ‘If you’re old enough to sell real estate to the gullible public, Nat, you’re certainly old enough to walk in all by yourself. In you go.’

‘What is it?’ I asked him. ‘Just answer me that.’

‘Natalie, you can see perfectly well that this is something I’m not going to be able to explain in a sentence.’

‘Try. Try hard.’

‘It’s an everted fractalized 6-brane. Now come with me.’

Not on your life, I thought. I stepped back, flattening myself against the closed garage door. A what? A brain?

‘You,’ I said, ‘you go in first, Daddy, I’ll follow in a minute.’ My heart was beating like the vanes of a chopper. Cold sweat ran down the insides of my arms.

‘I have to stay out here for a moment and off turn the instruments and garage lights,’ Hugh said, sounding

quite sensible. 'You go in first. Go on, Nat, it's quite safe. It's our reprieve from the Philippine plague. A drastic step, but a necessary one.'

I looked at the impossible slab of rock and I looked at my father the mad scientist and honest to god I didn't know which I trusted less. Hugh was smiling, being encouraging. You'd think I was balanced on the twelve foot board at the swimming pool and he was helping me psych myself up for a difficult dive—a back somersault, say. But this was no shimmering surface of blue-tiled water. I didn't have the slightest wish to plunge into living rock.

'Surely you don't want to be left behind,' my father said. 'The virus will reach California soon. It's inevitable. I know Emergency Services and the National Guard are making all the provision they can, but it'll be appalling. Millions will die. This is no ordinary virus. This is something manufactured, trust me. Military or terrorist, one or the other.'

'I don't care about the stinking virus,' I said.

'But you care about your family,' Hugh told me calmly. 'Are you going to desert us?'

I stared at my feet, mutinous and wordless. What he was saying was probably correct, I could see that much. But I didn't move. The truth is, I couldn't move.

Hugh fiddled with the remote. 'Damn it, Natalie. Very well. I'll leave the phase-change switched on.' He put it back in his shirt pocket. 'When you decide to come in, just walk through. You're a grown woman, and I really don't have time to baby you.' He gazed at me with a mixture of irritation and concern. 'Now I'm going to join the others. Please close the doors and switch the lights off behind you.'

I watched as my father walked straight through the rock, the everted goddamned brain, whatever the fuck that was, just as the other two had. And the dog. Even the dog was braver than me. Shit. He was gone. I was alone in the empty garage with a gleaming pile of lava. I turned and ran through the half-open doors. I ran out into the clean, dark night. I stood in the garden and looked up at the sky. There was a sickle moon caught in the branches of the apple tree. The stars were beyond number and without menace. I breathed in great gulping, heaving gasps. I was safe. I was free. But even as I leaned against the familiar bark of the apple tree, I knew that my father had seen into my heart, had been right to trust my loyalty, had known what he was doing when he turned away, trusting me to follow. I wasn't going to desert my family. I walked back into the garage.

I stood three or four feet away from the rock. It gleamed, but it didn't glow, almost like dark glass, except that the surface was so rough that it might have been carved from a mountain by a million hammer blows. I took a step forward, then I took a step back. I stood and stared at it, heart thundering.

Something soft and horribly alive pushed its way through the rock towards me. I screamed and jumped back. The thing snuffled. It was Ferdinand's snout.

'Ferdy,' I whispered. 'Come here, come to me.'

But Ferdinand's snout just continued to snuffle. His face didn't appear. I reached out and stroked the fur of his nose. Ever since he was a puppy I'd been Ferdinand's special human. Yes, he was the family's dog, but he was my pal. We had a thing, Ferdy and me. His nose disappeared back into the rock and I reached out instinctively to restrain him, to hold on to the one solid piece of sanity in the night, and found myself gazing at my own truncated arm. The cold lava encircled my wrist. My hand was buried. Nothing felt odd. I could move my fingers. The pup returned; I could feel his breath snuffling, then he licked my rigid fingers. I reached, trembling, to stroke Ferdinand's rough hairy head, moved my hand up over his face and soothed behind his ears. I could feel that dog wagging his whole body, as he did when you



stroked behind his ears: pure pleasure. My arm was now into the rock up to my elbow.

‘Oh shit,’ I said and quickly threw myself at the rock.

Ferdinand yelped. I’d landed on top of him. But he wriggled free and set to, licking my face.

‘Get away, you sentimental brute!’ I said, and sat up, pulling my skirt down around my knees.

I was inside an amethyst crystal.

Barking and running in circles, Ferdy tried to get me to play a game in this great new doggy fun place. All I could do was stare around in disbelief, not that I could actually see what it was I was looking at, because it was so utterly strange.

The lava wall was gone. From this side, the thing in the garage looked like planes of pale purple light, kind of furry, like an echo that faded away into the distance, more remote the harder you looked at it, and darker violet the farther away it got. Three dark mounds rose up out of the blurry violet-blueness, and in a gestalt jolt I suddenly realized what they were—the tents Hugh had bought five years ago for our holiday wilderness expedition. That thing deep in the blueness was the big geodesic dome tent for him and Mom, with the extension for the solar-operated stove and fridge and eating area, not that I imagined they’d be much use in this absurdity. Those lumps were the twin pup tents for Suzie and me. My mind twisted slightly, and I worked out that the tents had been erected using their internal frames, but hadn’t been secured to the furry blue surface with guy lines or pegs. Well, duh! there wasn’t any wind in here, and maybe the ground was too hard to hammer a peg into. All this worked its way through my head in a series of recognition flashes before the truly weird thing happened to Ferdinand and I started to freak in a big way.

The pup wearied of horsing around and raced off into the cold blue reaches. This time I really couldn’t believe my eyes, because something like a bad el cheapo video clip took hold of poor Ferdy. Haring off toward the lumps of the tents, somehow my four-footed furry pal became stuck in mid-air, legs paddling away, unable to move. At the same time he shrank a bit. Actually it was worse than that: he stretched out in a creepy way from his uplifted tail to his wet nose, while at the same time all of him got smaller. Yet his forward motion was stalled. You’d think combining those two effects would just make it look as if he were galloping away like usual, but it didn’t. It was freaky and horrible and scared me silly.

Then the pup’s feet seemed to stick to the furry blue surface again and he was running forward once more, skidding up to the big tent lump and jumping at what I assumed was the flap; it looked rather like a large fried egg. Luckily the tent seemed to be unzipped, and he sailed inside and was gone. I heard a deep, drawn-out groaning voice like some subterranean demon: ‘Noooooh! Gggeeeetttt dddooooowwwwnnnn, yyooouuu bbbaad boy!’ The pitch of the groan rose and turned into Grace’s voice reproving my mad pup. A moment later the unzipped flap flipped outward and Ferdinand shot out again, tongue lolling, looking for fresh mischief.

I just gave up, shaking my head dolefully, and started mooching toward the tents. Nothing weird happened, but the ground felt pretty dubious through the soles of my track shoes, a bit skiddy, then clacky like polished floorboards, then soft as thick grass, and all the time it just looked like the worst cheapo synthetic purple turf the most tasteless rug store owner in the world ever tried to foist on ignorant shoppers. I knew the species well; it was a favorite of the realtor’s worst clients. I bent down and ran my fingers along the horrid stuff. It felt like the top of a wire brush, the kind I use to clean loose hair and twigs out of Ferdy’s coat. This was seriously wicked territory, believe me. I gave another little giggle of fright and started running toward the tents.

‘Hey, Nat,’ cried Suzanna’s voice.

‘Where are you?’ I yelled. Which was stupid—she had to be in one of the small tents, and was. I pushed in through the spun-fiber fabric entry flap. Dark inside, darker than the horrible blue outside, but instantly comforting; the dim light was yellow, as light should be. A miserable forty watt bulb hung down from the top of the tent. Suzie was sprawled on an inflated mattress set on a wooden bed. Even in the bad light, I recognized Hugh’s handiwork. He’d built that bed using the timber from an old shed he’d knocked down last spring. Virtuous recycling.

Suzanna smirked. ‘I’m having this one,’ she said. ‘You can sleep in the tent next to the Porta-Potty.’

‘The what?’ I looked enviously around the dreary little tent, sure that it was better than its alternative, because otherwise my beautiful gifted sister would have grabbed that one instead. This was an entirely stupid assessment, as Suzie hadn’t been in here long enough to know which was the better of the two tents, but we had been rivals, of a kind, for as long as I could remember and this wasn’t the time to start practicing a belief in sisterly love.

‘It’s a portable toilet,’ she told me smugly. ‘It’ll smell like dog shit in a couple of days. It’s right next to your tent.’

‘Thanks a lot,’ I said, unsure whether to believe her or not. ‘Where’s Father? Is he with Mom in the big tent or what? She just threw poor Ferdy out.’ It was pathetic, what I was doing, and I hated myself for being so small-minded—trying to one-up Suzanna by casually dropping in a morsel of information she couldn’t know because she’d been relaxing in her choice of the tents. ‘Thanks, it’s good to be right next to the toilet, in case you have to go in the night. You could break your neck in the dark.’

‘This place is huge,’ Suzanna said. ‘You’ll find Hugh if you go exploring.’ She looked at me sideways. ‘Daddy says it doesn’t get dark in here, not real dark—just this blue haze all the time, twenty-four hours a day.’

‘But what is it?’ I hated the squeak in my voice. I hated having my kid sister knowing more about this weirdness than me. Had she been in on it all along? Was I the only one Hugh and Grace hadn’t told? No, that was crazy. Suzie could never keep such a monster secret for more than five minutes. ‘How come it’s inside a rock?’

‘Father started to explain,’ Suzanna said. ‘But you know what he’s like. He started raving on with technical details none of us could understand, then he said he’d wait until you joined us before he explained it properly. You’ll be relieved to learn that space and time are our redemption.’ She got off the bed and stood quite close, looking up at me because I was an inch taller. It came to me that she was at least as scared as I was, maybe more, and I reached out to give her a hug. She pressed her face into my breasts and snuffled. ‘Do you think Daddy’s gone religious or something?’

My belly did a little nasty jump, and I got a mental flash again about all the mad gurus and disappointed new-millennium saviors and their duped followers and the poisoned drinks in plastic disposable cups and the bodies lying everywhere like dolls no child wanted to love any longer. I couldn’t believe it—not Dad! not Mom!—but I couldn’t be sure either.

‘Weird, Suzie,’ was all I could say. ‘Weird as shit, man.’

## Five

We were forbidden to discuss the matter until we'd dined on the assembled leftovers from the kitchen, or a selection of them. This might have been a good policy, actually, even though I was going nuts with curiosity. It was more than an hour since Hugh had hustled us away from the end of the TV news and into the violet-blue place. Ferdy was noisily chewing a bone outside the big tent. Finally I couldn't stand it any longer.

'Look, Hugh,' I said. 'Just tell us straight. What is this preposterous thing, I mean this place?'

'It's a constricted vacuole in a higher spacetime.'

I stared at him without saying anything, and after a moment he blinked. 'It's an embedded spacetime discontinuity, a folded 6-brane,' he added helpfully, 'invariant with reference to planet Earth. It won't just drift away into space.'

'Oh good,' I said. 'You had me worried for a moment. I really can't abide drifting around in space.'

Sarcasm does not sit well with Hugh, not if it's directed at him. I tried to get my voice under control. I said, 'I take it this is some sort of classified device you've... um... borrowed from work.' Hugh works for an outfit called The Ferguson Institute. It's a bit hard to find out what goes on there—the name doesn't tell you anything and maybe it's not meant to. If you ask Hugh what he does, he just says he is paid to ponder the imponderable, which doesn't explain much. He is a mathematician, but a lot of the people he works with are engineers and code geeks. When I was little, one of them told me they were trying to make space and time flow in new directions. I had a dream that night of a river full of old wooden grandfather clocks floating along like rafts while Daddy and his friends were building a dam, trying to make the water flow into an irrigation ditch. They never said anything about furry amethyst crystals that you could stand up inside of and put portable toilets in next to your tents.

'Obvious. It's a Tardis,' Suzie said sunnily.

'I've just told you what it is,' Hugh said. The only thing that was obvious was that he'd never watched Tom Baker or any of the others being Dr. Who.

'Hugh, you should be wearing a long scarf,' Grace said simultaneously, smiling, to my surprise. I didn't know she was a secret Dr. Who fan. I don't watch the program myself, and they're all ancient re-runs anyway. 'Bigger inside than out,' I said, to show that I could keep up with this rather silly conversation—except that it wasn't a bit silly, as we were actually sitting inside a large yellow tent around a fold-out card table on canvas director's chairs in the middle of a lump of lava that couldn't possibly be there in the middle of our garage.

'What's a Tardis?' Hugh asked, defeated by this feminine knowledge.

'Everyone knows that,' Grace told him with a haughty look. 'It's a "time and space something something machine".'

'How could it be?' I said, cheering up a bit. 'That would be a Tasssm.'

'It's a Time and Relative Dimension In Space,' Suzanna said with great satisfaction.

'Well, perhaps that is one way to describe this vacuole,' Hugh said. 'It's not a machine, of course, it's a natural phenomenon. An anomaly of nature, rather.'

'What's it doing in our garage?' I asked hotly. Ferdy had crept back inside the tent and was snuffling around between our feet under the table; I thought I saw Suzie slip him a piece of chicken skin from her plate—something we were strictly forbidden to do, because the pup was getting fat, but we all did it anyway, even Hugh.

'That's what I've been trying to tell you. If you'd all pipe down—'

'If you just explain the explanation, Hugh,' Grace said, 'I believe we'd be most appreciative and hang upon your every word.'

'Harrumph,' my father said. 'You lot wouldn't understand the explanation, and I doubt very much that you'd understand the explanation of the explanation. All you need to know is that this discovery will save the family from the ruinous epidemic that's about to sweep the planet.'

'What?' I found this hard to believe. 'It's some kind of weird germ-free zone? Is that why the light's all blue and horrible? Is it sort of sterilizing the air and killing the plague viruses?' A kind of echo of what I'd just said rang in my head, and that horrified me. 'It's not sterilizing us, is it? It's not going to give us cancer?' I clutched my arms against my chest without even meaning to. My chest was already quite a lot

bigger than it had been when I was Suzanna's age, and rather precious to me. I could certainly do without breast cancer. For some macabre reason I thought of Talbot, and a pang of loss stabbed through me. The children we would never have together. Tears prickled my eyes.

'Don't be foolish, Natalie. Why would I put you in danger when I'm seeking to avoid danger?'

Grace murmured almost under her breath: 'The lesser of two evils?'

Hugh sighed in exasperation. 'We're going to avoid the plague by not being there while it occurs. I wish I could do something to help those poor people in Manila, but I'm not a medical doctor, I'm a research mathematician. And this vacuole will be our hiding place in an embedded spacetime.'

'I told you it was a Tardis,' Suzanna said, slipping Ferds another scrap of chicken fat. They have a good relationship, Ferdinand and Suzanna—she eats no fat, and he eats no lean. You could write a poem about it. Well, doggerel anyway. (Joke.) 'We'll sail through space to another universe,' she said, 'and find a planet where the plague doesn't exist, and I'll be a princess and Nat can be my lady-in-waiting.'

Obviously she didn't believe any of this; it was as if she thought everything that was occurring was all a dream, or some rock band's lyric. I believed it, though, with every fiber of my sickened heart. My father had done something to the laws of space and time, and we were stuck in a sort of limbo where the rest of the world couldn't reach us: not the diseased hordes of Manila, not that faithless bitch Deb, not Talbot if he so decided, relented, came to his senses. Not without Hugh's gismo, anyway, I thought. Without his remote control gadget doing its patented phase-shift trick nothing could get you through the lava wall and into the violet furry place.

'You really do mean it's a kind of, um, hole in time?'

'Not yet,' Hugh said, leaning back in his director's chair. The canvas at his back creaked in the strange silence of the tent and the bent space outside the tent. 'Time is still passing at an equivalent pace inside the vacuole. Once I activate the Feigenbaum Cascade we'll jump instantly into the future. With luck, the plague will have run its course by the time we emerge.'

Obviously Grace had heard all this before, after Hugh's three week disappearance and nonchalant return—of course, that's where he'd been, my God, voyaging in time—and had got used to the idea. Suzie and I had to take it in all in one hit, like a smack in the face. Tardis Schmardis, you can joke about such things even when you're sitting in an impossible place you've reached by walking straight through a solid lump of something that looked like rock. But jumping through time? Awesome. Cool. Terrifying.

That wasn't Suzanna's reaction, though. I could see as clear as day the very moment when she understood that this wasn't a joke, wasn't a trick, wasn't just an entertaining prank for the evening, a charming way to picnic in the garage. Without any warning or build-up, very red in the face, she jumped to her feet and her chair went crashing over on the tent's fabric floor. It caught Ferdinand on the tail, and he yelped, bounding back in shock and indignation. My sister clenched her hands into small white fists.

'I'm not going and you can't make me!' she shouted shrilly.

'Sit down, darling,' Grace told her without raising her own voice. 'I know it's rather hard to take in—'

'Andy and I have been saving for four months to buy those Big Spew tickets,' Suzie shrieked. I swear to God, she actually stamped her foot. 'Two days before the hugest rave the world's ever seen, and you're trying to stop me going to the Spewies' show even after you promised it'd be okay if I got that job at Safeway and saved up all my wages and did my homework and got good marks in the exams...' She was almost spitting with fury and disappointment.

‘You clearly haven’t grasped the seriousness of the situation,’ Hugh explained, a man who clearly hadn’t grasped the seriousness of getting between a hard-working daughter and her romantic obsession with (1) the baddest rock band in the known universe and (2) the long-dreamed-about evening screaming her lungs out next to her sexy boyfriend Andrew Carstairs Compton III, karate champ and big man on campus.

‘All that garbage about viruses,’ Suzie shouted, ‘I should have known, what a crock, anything to make sure I have a shitty time!’

Hugh’s face was something to see as well. Finally he was getting angry, not about to be put in his place by an insubordinate 17-year-old. Very deliberately, he drew from his shirt pocket the video remote that wasn’t a video remote, and clicked a sequence of four numbers. A tone sounded from the device, and a small clear red light started pulsing in the top right corner.

‘Your private plans are just going to have to be put on hold, Suzanna,’ he said. ‘I’m afraid that in fifteen seconds we’ll be—’

And then she was at the tent flap door, and out of it, and gone into the blue light. Hugh’s jaw dropped, and Grace jumped up with a stricken cry. Ferdy ran out the flap after Suzanna, followed by the rest of us, chairs flying, flap flapping, shadows bouncing eerily in the weird mixed light of the blue walls and the yellow illuminated tent. We got out in time to see Suzanna reach the blurry boundary of the vacuole, the place that presumably still looked from the other side like a sheet of impossible lava. She hit it in slow motion, passed into the surface, was gone. The red light was flashing, the remote beeping once a second. It seemed as if half a minute had passed, or maybe five excruciating seconds, I couldn’t tell, everything was either skidding into treacle or wildly speeded up, and Ferdinand was racing helter-skelter after his vanished mistress, leaping with all four hairy, big-footed feet in the air, hitting the blueness, passing through it with only the tip of his tail showing like a party trick, and—

The top of my head was torn off.

A green flash so bright and so quick it blinded me came and went, left me blinking into a deep rose-red after-image. I couldn’t hear anything except my mother’s despairing wail. Tears filled my shocked eyes, and I stumbled, outstretched hands rubbing painfully on the wire-brush surface of the purple floor. When my eyes cleared I screamed as well, in horror and disgust and awful sadness, because a small hairy object was lying on the ground in front of me, right next to the wall that wasn’t quite a wall—a hairy hank of dog-fur and raw white bone, leaking a small puddle of blood.

It was Ferdinand’s tail, or most of it. I picked it up and held it out to Daddy, crying hard and not knowing what to do. The wall had swallowed Suzanna and our lovely old pup, and left us nothing but his poor tail, which the damned weird vacuole wall had bitten off and left lying there like a lump of garbage.

## Six

My father stared at me with a look of angry accusation.

‘What did I do?’ I said hotly. ‘What the hell just happened?’

Hugh sighed, and his expression changed. ‘It’s not your fault, sweetheart. I should have reversed the phase after you came in, that’s all. Suzanna shouldn’t have been able to get out. My fault, my damned fault.’

‘Pointing fingers won’t help any of us, least of all Suzanna,’ Grace said. But she was shaking, seething with anger.

‘Well,’ he said, quite shaken, ‘let’s just hope the plague passed quickly and the child has survived.’

‘What are you talking about?’ I said. ‘How could the damn plague have passed? It hasn’t even got out of the Philippines yet.’

‘I was about to explain it to you all,’ Hugh said. ‘But Suzanna had to create a scene.’

‘Well, by god, you’d better explain now,’ I said.

‘I estimate that the vacuole advances forward in time,’ Hugh said, ‘in multiples of 14.668, approximately. Feigenbaum’s number multiplied by pi.’

‘You estimate!’ I said. ‘You think you know how this freaky device works. Don’t you know?’ Part of me was gibbering and hiding its head. Time? Advances?

Hugh ignored me. ‘If my calculations are correct we have been in the vacuole 370.7 days. It should now be 1.30 in the afternoon, a little over a year since we entered.’

‘Don’t be ridiculous,’ I said. ‘Whatever it was, that flash might have flattened us for a moment, it can’t have knocked us all unconscious for a whole year. Be reasonable.’

‘That flash,’ Hugh said, ‘was spacetime everting. As far as we’re concerned we have only been in the vacuole a few minutes. Outside, time has proceeded at a very different rate. If my calculations and earlier calibrations are correct, of course.’

‘Fuck the calculations,’ I said. ‘I’m going out there. We have to see if Suzie is all right. I want to see my poor dog.’ I strode straight at the fuzzy blue wall, half expecting to be knocked down by another flash, so angry I didn’t care.

‘Not so fast, Natalie,’ Hugh yelled. Way too late, I was already passing smoothly out of the vacuole into the garage. The phase-change, whatever that was, must still have been switched on, because I slipped through the rock as if it were slightly heavier air.

Time had passed, all right, half a day at least. And in the blink of an eye. No doubt about that.

A moment ago it was the middle of the night. Now it was cloudy daylight, judging by the thin light filtering in through the small window, quite bright but grayish. The doors were shut. Everything in the garage was covered lightly by dust.

I pushed open the heavy garage doors and stepped out into the garden. ‘Suzie!’ I yelled anxiously. ‘It’s me—Natalie.’

No reply. The house looked deserted.

Worse than deserted, now that I really looked at it. The grass hadn’t been cut for months. Hugh’s neat lawn was overgrown with small clumps and patches of weeds, and the shrubs were gone to seed.

Half a day? Who was I kidding? Hugh was right—we'd done a Rip Van Winkle. We must have been gone for at least a year. How could Suzanna have let this happen to our home? Did the child have no self-respect, no pride of ownership? Her laziness had knocked tens of thousands of dollars off the value.

'Suzie!' I yelled again, panic-stricken. And then: 'Ferdy! Here, Ferdinand!'

My dog came hurtling round the corner of the house and flung himself on me. The mad animal was leaping up and down, barking, trying to lick my face. You'd think he hadn't seen me for a year. If what Hugh had said was true, if the evidence of neglect were to be trusted, he hadn't seen me for a year.

'Give us a look at your tail,' I said. But I had to grab hold of Ferdy and hold him down before I could examine the stump of his truncated tail. The wound was completely healed. Not only no blood, hair had grown over the stump. I could scarcely find a trace of scar tissue. 'Hell,' I said, 'it has been a year. Where's Suzanna? Come on Ferdy, take me to Suzanna.'

'Nat!' Hugh poked his head around the garage door. 'Don't go into the house. It might be infected. We don't know what's happened yet.'

But I wasn't going to cower outside my own house. If my baby sister was inside, I was going to find her. The stupid thoughtless bitch.

'Come on, Ferdy.' The kitchen door resisted my pressure, stuck or locked. I went around the side of the house. Hugh stood just inside the garage door, Mom lurking behind him. He called anxiously, keeping the pitch of his voice low, 'Get back here, Nat. We have to proceed with utmost caution.'

I was already running along the side drive. All the downstairs' windows had been boarded up at some stage from the inside. They still held their glass, but a solid, brutal wall of planks showed where the curtains should have been. It was a deeply shocking change, an impossible detail that smacked me like a blow to the head. I ran round to the front door, banged loudly, yelling my sister's name. No one came to the door. Beside me, Ferdy was wagging his whole body from nose to stump. If he'd had a tail it would have been cracking like whip.

I heard Suzanna's guitar. Somewhere deep in the house she was playing a riff of descending chords. Even stuck outside the front door I knew it was Suzanna's playing—and even stuck outside the front door I knew that she had improved by leaps and bounds. The girl was almost competent.

'Suzanna!' I shouted at the top of my voice, picking up a fallen, dried tree branch and hammering on the door. The guitar stopped. I stood and listened. Footsteps. Instead of coming to the door, they raced up the stairs. With a timber screech, our bedroom window opened. I stepped backwards a few paces, off the porch, and looked up. Without the slightest warning, a masked figure at the open window raised a threatening object made of dull metal pipe. With a sudden twang, something vicious thunked into the dead grass of the front lawn an inch from my bare right leg. Ferdy barked. I stared down at it, unable to believe what I saw—a steel rod sticking up from the flat grass, a foot and a half of lethal metal with a crude tail feather made of stiff plastic.

'Shit!' I screeched. The thing in the intruder's hands was a cross-bow!

A woman's voice yelled something back at me, muffled by the mask. Maybe she cried Fuck off, bitch. In paralyzed horror I watched as she wound back the string of the cross-bow, began to fit another steel arrow. 'Where's your filter-mask, you moron?' she shouted. I was definitely getting the impression that this woman was seriously pissed off at me. The cross-bow went to her shoulder. Then suddenly dropped.



'Gawdalmighty, Nat.' Her speech was still muffled by her mask, the kind that surgeons wear on Chicago Hope or E.R. when they're doing delicate operations on the naked brain, or Chinese bicyclists heading off into the smog of downtown Shanghai. She was very, very angry. 'I nearly shot you!'

'Suzanna, you moron.' I stood gasping, heart thundering with fright, still not quite convinced of her identity. Something awful had happened to her, that was for sure.

'Where the fuck have you been?' Suzanna demanded, more furious than ever.

Her hair was cut brutally short. Whoever she'd selected as her hairdresser had used gardening shears. My little sister's face was leaner, tougher, maybe meaner and certainly a year older. More like two or three years. Gazing up at her, in the afternoon sunshine, I realized she might have been older than me, just to look at her. The work shirt she wore was dirty and torn. She seemed to be wearing heavy green plastic or rubber gloves.

'Let me in, Suzie,' I said.

'Have you got it?' Suzanna asked, not budging.

'Got what?'

'The plague, damn it, what do you think?'

'Of course not,' I said, offended.

'There's no of course about it,' Suzanna said. 'Anybody can catch it. If they're still alive to start with. Where have you been all this time?'

'In the vacuole,' I said.

'That lump of lava? Bullshit. It disappeared.' There was a catch in her throat, and the cross-bow wavered up again. 'It never came back.'

'Space and time collapsed. Constricted. Everted. Whatever. It was only a quarter of an hour ago.'

'It was a year ago. More.'

'Not if you were inside the thing. Let me in, Suzie.'

She hesitated a moment longer, then corrected me, curtly. 'Suzanna,' I thought I heard her say. Oh, okay, young miss has decided diminutives are beneath her dignity.

'Please let me in, Suzanna,' I said, rather coldly.

'Not "Suzanna",' she told me, and then pulled down her mask so I could see her mouth. It looked much too hard for a 17-year-old girl. Even for a 20-year-old girl. "'Zanna".'

'Not "Xena"?' I gibed, my fright curdling to annoyance. But she looked suddenly as if she could tear off one of my arms and wolf it down for breakfast. Most unnerving in Ms. Priss In Boots. 'All right, all right. Zanna, you could have killed me with that damned arrow.'

'It's a bolt. Or a quarrel.'

I stared back up at her, still shaky. 'What?'

‘That’s what the projectile from a cross-bow is called.’

‘Good God,’ I burst out, ‘have you been training with Maid Marion’s School for Lady Archers or something?’

Unamused, she returned my stare. ‘Something like that. While you’ve been skulking in safety.’

‘Well, put the fucking cross-bow down and let me in,’ I said. ‘Thing like that could kill a person.’

‘Cross-bows don’t kill people,’ she said in the driest possible voice. ‘Quarrels do.’

After a moment of disbelief I sagged, and released a squeak of relieved laughter. It must have been the magic signal.

‘Yeah, okay,’ my horrifyingly altered but still whimsical sister said, then. ‘Come around to the back door,’ and she disappeared from the window.

## Seven

I remained where I was for a moment, trembling, halfway between laughter and tears.

Ferdy ran off around the side of the house. Not my pup-dog any more, clearly. A cloud covered the Sun, and I shivered again. Up the street and around the corner in Cole Porter Road, a heavy truck changed gear. The lonely

sound made me realize, with a jolt, something very strange—all this time, there'd been no traffic, which maybe wasn't unusual for the middle of the day in our fairly quiet street, but also no sounds from Cole Porter Road or McCormick St, either. There ought to have been a low grumbling hum of shoppers and midday commuters audible from the strip mall one block over.

I went curiously to the front gate between the overgrown hedges and glanced up and down the street. None of the other houses looked any more lively than ours. The awful Mahoneys' joint seemed to have all its windows, plus the front entrance, covered by sheets of corrugated steel that had been neatly screwed into place, not as rough and ready as the criss-cross of recycled timber on our lower windows. The Angusturas' house over the road was less conspicuously prepared to repel boarders and burglars, if that was the idea, but then I made out all the steel bars behind the dulled glass in the windows. Those hadn't been there before. Yikes! Property values, a small part of my mind gibbered, had clearly taken a turn for the worse, and not just from the ill-kempt lawns.

The rumbling truck came around the corner down at McCormick. With a certain mild interest, I watched it slowly approach. A man wearing something approximating to a military uniform sat behind the wheel, and another uniformed fellow stood in the back, looking intently around. Incredibly, both he and the driver wore masks and dull red gloves. It took me a moment more to see that the thing cradled by the guy in the back was a large gun of some kind—a semi-automatic, I supposed. I don't know that much about weapons, despite Hugh's belief that they were useful tools that everyone should be conversant

with. I'd been dazed; now I was numb.

A hissing voice said near my ear, 'Get down, you cretin,' and a hand dragged me painfully behind the ragged hedge that almost covered the letter box. I hurt my knee as I fell and started to snap back at Suzie, Zanna, whatever, who was crouched beside me in her battle gear, wary and poised as an animal. 'Shhh,' she hissed. I shushed, noticing for some reason that the letterbox was open, its top rusty and covered in spider web. No mail deliveries any more? What? Huh?

As the truck passed by, there was a thump, and something tumbled across the weed-ruined front lawn. I peered through the intertwined branches of the hedge shrub that barely hid us. A third person, also standing up in the back of the vehicle, was lobbing hefty wrapped bundles into the front gardens of selected houses, and seemed to be consulting a list. The truck rolled away down the street, but still nobody came out from their homes to investigate or collect these strange deliveries.

'Supplies,' Zanna whispered.

'Where's Ferdy?' I whispered back. 'He loves chasing cars and trucks.'

'He's learned better,' this new, hard version of my sister said. 'Dogs are shot without warning unless they are accompanied by a human.'

I didn't know what to say to that, which was just too weird and stupid to be anything except a horrid joke. Noticing my uneasy expression, she added, 'If they'd seen you without a mask, you'd have been hauled off into custody. Or just shot out of hand. We don't like strangers.'

Zanna skinned away across the grass, grabbed up the sizeable bundle with both gloved hands, heaving it up against her chest, and left me to follow her down the side of the house.

Hugh had pulled the door of the garage closed most of the way, and just his left eye showed.

'Don't touch anything, Natalie,' he ordered in a low but carrying tone. I could tell he was deadly serious. 'Whatever you do, don't have any physical contact with your sister or the animal.' He added, 'I'm sorry Suzanna, but I'm sure you understand about possible contagion.'

Zanna was standing at the entrance to the kitchen with the supply bundle in her arms. Ferdinand stood at her heel, looking alertly from one person to another.

'No shit, Father,' she said. 'Typhoid Mary, that's me.'

'Too late, Daddy,' I said. 'I've already given Ferdy a big hug.'

My mother's voice said from further inside the garage, 'For heaven's sake, Hugh, get the girls in here or let's go inside the house. I need a cup of tea, and I'm sure Suzanna has a great deal to tell us about her adventures.' She sounded like a scout mistress rounding up her charges following a bracing hike through the local park. She's not like that at all, of course, which is what makes it work.

'The house, then,' my father said. 'What's done is done. But please keep contact to a minimum, darlings, until we've had a chance to sort out what's up and what's to be done.' The garage door creaked as he pushed it open, and he and Grace came out blinking a little into the now dully-daylit yard. Zanna unlocked the door, nudged her heavy carton of supplies into the hallway with one foot and watched the parents guardedly.

Behind her, through the door, the interior of the house was very dark. I could half see into the kitchen which was only illuminated by thin shards of light, slanting through the boards. It didn't look very inviting.

Suzanna, Zanna, raised her hygiene mask again to cover her nose and mouth. Overhead, the clouds were massing against the Sun.

'I'm so very glad you've survived your ideal, Suzanna,' Hugh said. Simultaneously, Mom said, 'Oh dear one. Oh my poor baby,' and to my astonishment burst into tears and ran across the withered grass to wrap her arms about my sister and cover her changed face with kisses.

'Grace!' Hugh cried. 'You're putting yourself at terrible risk!'

Mom swung round to face him, suddenly furious. 'She's my daughter,' she shouted. 'And she's yours too.'

'Yes, dear,' Hugh said quietly, 'of course she is. We all love her very much. But that's not the point.'

'Then what is the point?'

'The point is that Suzanna has been stuck in the middle of this terrible epidemic for over a year and there is no call for the rest of us to put ourselves at risk.'

'Actually it's quite fashionable,' Zanna said, as if she were commenting on the cut of a pair of jeans.

'What's fashionable?' I said.

'Throwing in your lot with your family or friends. It's called Spin the Bottle. Everyone sits round in a circle with a bottle in the middle—lying on its side. Someone spins the bottle and then kisses the person it points to. Then that person does the same. Finally everyone has been kissed by everyone.'

'Suzanna!' Hugh said. 'You haven't done this?'

'I haven't exactly had my family around me for the past year. There was no one to do it with.' Zanna said. 'I read about it on the Internet. That was before the Internet crashed.'

'You should have stayed inside the vacuole,' Hugh said despairingly.

'Well, I didn't,' Zanna said. 'Do come inside, won't you?' She spoke in a hard-voiced parody of a society hostess.

We all edged silently past her into the house and sat down around the kitchen table. My sister relocked the door to the outside and maneuvered a heavy piece of timber into position, barring entry to anything less forceful than a ram raider. She joined us at the kitchen table. Lying on the table in front of us was her cross-bow, a grisly conversation piece. It appeared to have been made out of a car spring and various lengths of pipe carefully wired together. Zanna tapped it and said to Mom, 'I flogged your pearl necklace for this. Armaments are at a premium.'

'Oh, darling,' Grace said, dismayed. 'That was a graduation gift from my mother. Was it really necessary?'

'Absolutely,' Zanna said. 'I'll make you some coffee.'

She busied herself at the stove, flicked a few switches. 'Electricity's off again. Never mind, I've still got some propane.' She struck a match and lit a small burner. The pale flame added its flickering illumination to the light from the cracks in the boards. My sister arranged a saucepan of water over the burner and sat down. I'd never seen her make so much as a boiled egg in her life.

'Suzanna, the photovoltaics should still be working.'

She gave Hugh a sour look. ‘Dad, here’s survival rule number two: don’t make yourself different.’

‘But surely inside the house—’

‘The first thing people will notice is an electric light shining or a sound system playing when everyone else is blacked out except for light from the propane flame. Trust me.’

There was a moment’s silence and then Grace said, ‘Have you been here all alone, dear?’

‘Mrs. Blakeley was here until she died.’

A neighbor. Evidently a former neighbor. Mom’s hand came up to her mouth. ‘Oh dear.’ She was too distressed to get anything else out. Grace had been quite fond of the old lady, who reminded her a bit of her own mother. Gran had died when I was little, and Pops lived in Florida by himself. Father’s parents were in England, and he didn’t get on with them so all we got from them was a polite card at Christmas. A couple of years ago Mrs. Blakeley had moved into a small apartment on Cole Porter Road; while she was quite nice we’d never seen all that much of her, because she’d said she didn’t want to be an intruding pest.

Hugh said, ‘Did Mrs. Blakeley die of the...’

‘No, she didn’t,’ Zanna said. ‘She just died. She was old.’

‘Well,’ Hugh said, ‘it’s a great pity, of course, but we should be thankful that she was spared the ravages of the virus.’

It was all too much. Normally I’d have been a bit upset to learn of the old thing’s death—but too many things had been happening too fast. As far as my parents and I were concerned, an hour ago we’d been a slightly dysfunctional family watching the television news. Now the whole world had changed utterly and I had this strange, tough younger sister who seemed by every measure older than I was. I said to Zanna, ‘Tell us what happened when you went rushing out of the vacuole.’

She busied herself for a moment with the coffee, then shrugged. ‘Ferdie barked his head off. He went hurtling round and round in circles trying to lick the stump of his tail.’ Zanna laughed, but it wasn’t her old liquid musical laugh; it was hard and joyless. ‘Then there was a bang.’

‘Ah,’ said Hugh, almost with satisfaction, ‘that must have been the implosion, the air rushing back in when the vacuole constricted. I’d noticed a momentary over-pressure on an earlier—’

‘Yeah, that’d be right,’ said Zanna, dry as dust. ‘Big noise. Ferdie forgot about his tail.’

‘You poor child,’ Grace said, ‘all alone in the house. And we’ve taken most of the food. However did you manage?’

‘I went and got Mrs. Blakeley. We lived on her pension. We thought you were going to come back after twenty-five days. That’s how long you were away before, Father.’

It was heartbreaking. My poor lonely, deserted little sister. Behind her flat recitation, I could hear the misery of a small kid lost in the middle of a busy shopping center. You know: a five-year-old child who imagines she’s been left behind by parents who don’t wish to keep her any longer, who are going off to get a new well-behaved daughter. I remembered, then, with a shiver, that I’d had a dream like that once, when I was a child. Or maybe I actually did get separated from Mom one day. All I remember—but incredibly clearly—is the anguish, the terror of separation, the horrible conviction that I was just no good and would never see Mommy or Daddy again...

And for poor Zanna it wasn't a foul dream she'd woken up from, sweating and hoarse from yelling in her sleep—it was what actually happened!

We stared at her in horror, seeing that teenager and her aged guardian waiting and waiting day after day, peering every morning into the emptiness of the garage with its partly opened doors and finding nothing but the same benches of tools and automatically powered-down monitors and an old oil stain in the middle of the concrete. A week, then two weeks, three weeks, getting increasingly desperate—banking on that earlier time Hugh had vanished only to come back safe and sound after three and a half weeks. Waiting for day 25. And still nothing, even then. Nothing in the garage but silence. Dimness. Inactive machines and screens. Mrs. Blakeley unable to comprehend the weepy babblings of this distraught 17-year-old who'd turned up on her doorstep claiming her whole family had disappeared, certainly not believing a word of this nonsense about a great lump of lava you can walk inside and tents in a blue-purple furry place and everyone vanishing into... what? A bang of emptiness!

'I thought after a while that this time it might take twice as long,' Zanna was saying flatly. Coffee aroma covered the musty smell of the kitchen; I helped her find four mugs and fill them with black, nasty stuff. After tense silence she went on: 'Like, if you took 25 days to come back once, maybe it would be 50 or 51 days this time. But it wasn't. You just never came back. And by then the plague was here from Manila, and everyone was too sick to spare police to hunt for half a missing family, and food and water supplies were running low.'

She looked down at her steaming coffee mug, and one hand reached out to caress the cold metal of the cross-bow. I don't think she even knew she was doing that. My sister had changed into a survivor. If she had wept when we vanished, that was truly a long time ago—for her. For the world.

But not for us. We sat immobile at the table with our eyes full of tears and our throats choked with sorrow.

'So what the hell did you do?' I said. 'When we didn't come back?'

'Well, the first thing was, Andy and I went to the Big Spew concert,' Zanna said. 'That's why I rushed outside, remember?'

'You went to a concert?' I said, voice squeaking. It was so incongruous I wanted to laugh.

'Sure. What else was I to do? It was a great concert. That was the last normal thing that happened. The flu hadn't yet reached continental America—or not much of it. Everybody was zoned. The Spewies were fantastic. For a few hours I forgot about you guys.'

'And everybody breathed on everybody else,' Hugh said.

'It was a rock concert,' Zanna said.

'Where's Andy now?' I said.

'They took him away,' Zanna said.

'Who did?'

'The Poxies. You know, the Quarantine Police—they caught him trying to cross a Declared Buffer Zone with a bag full of salami. They arrested him for smuggling.'

'So where is he now?'

‘Who knows? They don’t tell you. They just cart people away.’

Grace shook her head in dismay. I really couldn’t take in what my sister was saying. Drag people away? What, lock them up in jail somewhere just because they’d had the misfortune to get sick? I got a sudden flash of Talbot and Deb, of my other friends, people like Toby Barnard who delivered pizzas when we were at school and then ran a dot-com into the ground, like everyone else.

‘Where’s Talbot?’ I said. ‘Have they taken him away too?’

‘Sorry, Nat.’ Zanna looked away. ‘Your beloved escaped boyfriend died.’

Just like that: he died. It was a punch in the gut; I sagged, literally, and clutched my arms about myself. Poor Talbot. The prick, and now I’d never settle accounts with him. I’d loved him so hard, and hated him so fiercely, and now, maybe, I’d never, ever get over him. Tears ran down my cheeks; Mom came to me and held me against her. I forced myself to ask the next question.

‘What about Deb?’ At Zanna’s silence, I grimaced in dread. Oh shit, not my best friend as well. The bitch. Not Deb Gorman the red-haired prankster I’d known since second grade when she and her big family had arrived from Texas with their silly jokes about wetbacks and hurricane rains that washed your car away into the culverts and—

‘Dead. One of the first adults to go,’ Zanna said. Nothing to soften the blow. Just another fact of life. I stood up abruptly and went into the gloom of the hallway and up the stairs, ignoring the voices calling me back. The door of my bedroom was shut; it resisted slightly when I turned the doorknob and pushed. My dressing gown had fallen from a hook, jamming the door. I kicked it aside, started to open the curtains, stopped. Dangerous. Everything I did, every step I took, was freighted with unknown consequences. One thing I knew with all my heart: I would not stay in this awful ruin. We would escape back into the blue place.

My eyes adapted to the dimness, and I peered with regret at everything I’d taken for granted: the single bed I’d slept in as a child, and then again when I’d returned defeated by Talbot’s betrayal. The photographs in their frames, the CD player, the lifeless computer on its desk, the girlish memorabilia. Couldn’t rescue any of it now. The dead past. Sniffling, I crouched beside the bed, reached underneath, drew out a cardboard box furred with dust. Amazingly, the ribbon wrapping them was undisturbed. How could Suzanna have resisted the temptation? I untied the red ribbon carefully, took out the twenty or thirty love letters from Talbot. Well, some of them were love letters. And a handful of other letters, Valentines and cards from earlier boyfriends were there too, but it was Tal’s hideously articulate letters I pressed against my breast, rocking forward on my knees and weeping. He’d disliked email, at least for intimate correspondence. During my six months as a graduate student in Paris, at the Sorbonne, I’d come to dread those letters, but the phone calls were worse and ruinously expensive.

My dear Francophile

I loiter beneath a bedspread of cats (Daily Alice sends her regards, Mrs. Grundy is asleep and snoring) reading the local council ordinances on the ownership custody and provision of all livestock fowl beast fish and other provender on the hoof not to exceed two (2) in number without express permission of the aforementioned statutory body and the ordure therefore to be contained within a competently constructed construction which must be emptied once every seven (7) days to the satisfaction of the health requirements of the above itemized body of councilors lest a maximum fine of ten (11) Penalty Units be levied. Presumably this final abstract obfuscation allows the interfering swine to raise the fines in line with inflation without having to crank out revised editions of the document in question.

I am not really avoiding last night’s Deep and Meaningful Trans-Atlantic Conversation.



Perhaps I am.

Bad Talbot, turning his heart down to simmer and popping his brain in the oven to bake. I suppose if that were entirely true I wouldn't feel angry at having it pointed out to me so frequently, which is a consolation of sorts. Still, it's clearly not sufficient for me to complain that this is all a matter of misread codes and garbled messages (or messages not sent but, in their absence, received as the contrary of anything intended).

What you said last night strikes me as itself a mis-reading, or probably as a miswriting on my part. I'm always disappointed, you maintain, to find that even the smartest women have only a limited interest in ideas for their own sake before, you assured me in your parodic way, they swarm into that murky personal stuff, those engulfing emotions, those suffocating demands for love and caring. Men find emotions, feelings, too trite for them. And so on and on.

I was struck dumb, Nat. I don't know about 'men'. 'Men' are as great a mystery to me as they are to you, my sweet. You won't catch me in the locker room flicking some guy's manly ass with a wet towel. (Maybe that's the problem.) Anyway, what's this alleged split between thought and feeling? I don't find it odd, let alone insulting or reprehensible, to move smoothly after a fond fuck into the wellknown and widely advertised joy of ideas and languid word games, though I do see that I ought to put a stop to it if it offends you by seeming to suggest a wish to bolt away from the sensuous reality of the moment. Good Christ, I feel as if we're stuck in an Existentialism 101 class. Maybe this boils down to a time and a place disagreement, where signals do after all get crossed.

But we've been through all this before so often. You're actually implying that open emotional communication is seen by me and 'men' not as trite but as terrifying. Shit, might even be true, but I don't really know why it should be. Are you sure you're not projecting on to me your perception of your father, your resentment of his fecklessness? Hugh has all the empathy of a fence post; I trust I'm a tad more responsive than that.

Perhaps it has something to do with contest and vulnerability, but if that's it I should relish nothing better than three quarters of an hour of long-distance lacerating and deconstructing each other on the phone. Instead, I lie here sickened and ashamed under a bedding of cats. I rather like being softshelled under the right circumstances. That's why I hate it when you go straight into attack-defense mode, Nat, it leaves me with nowhere to go, neither forward nor back. I'm stuck, we're both stuck. I have to tell you, there are a few things you could learn in that department from your friend, Deborah Gorman.

After a time, I folded the pages again, slid them into their envelope, wiped my face on the turned-down bed sheet, shoved the letters into the waist band of my skirt, and went back downstairs, leaving the door open. History. Gone. Somehow I couldn't quite accept it. Perhaps that was my first inkling of the truth I have arrived at, finally: that all our lives we search helplessly for beginnings.

When I came into the kitchen, Zanna stood at the Formica counter dealing with the heavy delivery parcel, tearing off the industrial plastic covering with deft, practiced movements of her capable hands, slitting it open with a sharp thumb nail instead of a knife.

Inside a cardboard box was an odd bunch of stuff that she proceeded to remove and stack in assigned corners of the kitchen while Hugh and Grace did what they could to elicit more details of her atrocious tale. A small paper pack of coffee went into a steel box with a lid bearing a faded scene of red-cheeked children riding a toboggan in English snow, something from the dim past brought over by Hugh's parents, but Zanna was living vividly in the present and storage against ants and mice was its only use now. Several strips of bacon and a shrink-wrapped lump of fatty steak didn't go into the fridge, because of the unreliable electricity supply to the refrigerator. Instead, Zanna put the meat into an evaporative safe she'd

obviously constructed herself—a sort of light cage covered in wire-mesh and then draped in wet hessian, with a snibbed door also of mesh, sitting in a tray of water over the drainage shelf of the sink. Clever. Who would have thought it?

I stared in fascination at the miserable pile of rations. It was like watching some old World War Two movie on TV, with people lined up holding out shopping coupons and buying lard (whatever that is) instead of butter, and something gruesome and poisonous-tasting instead of coffee. Chicory, wasn't it? Did they drink coffee back then? Zanna fished out a small square of soap, a plastic bottle of detergent, generic analgesic capsules in a blister pack, a package of Band-Aids, two rolls of toilet-paper—not much for a family, but then they probably knew she was living alone—a handful of tampons and several sanitary pads.

Zanna gave me and Mom a sardonic look as she pushed these treasured feminine items to one side. Once we'd been embarrassed to go into a store and buy them. My sister looked as if she'd swap a small piece of gold in exchange for this modest hoard. 'The comforts of civilization,' she muttered. 'Teaches you not to take things for granted. They had none of these, or toilet paper, either, for four months. Things have gotten better the last few weeks, but the radio and the gossip net says we're fucked in the long run. Too many people dead, sick, in quarantine, or out of their minds.'

Grace released my shoulders and crossed the room to stand beside her with one arm comfortingly about her. I thought Zanna was going to shake off her embrace with an irritable shrug, but instead she allowed Mom's gesture.

'Darling, we have plenty of these supplies inside the... the Tardis thing, as you called it.'

'Did I?' Zanna kept sorting her goods, placing sugar in a covered bowl and matches in a wooden box. 'How cute of me.' Her voice was cool, not to say cold. A shiver of pain went through Grace's tight muscles, but she did not betray her grip on her daughter.

'You really don't need to do that any more, darling,' she told Zanna. 'You'll be with us, thank heavens. Once your father gets in touch with the authorities, I'm sure we'll—'

An indistinct noise from the front; Ferdy scratched at the back door. Zanna opened it quickly and he ran in with a menacing growl, low to the ground, and crouched under the table. The dog and my sister exchanged a glance that was almost like human communication. My skin crinkled in sudden, causeless fright.

'Forget the authorities,' Zanna said sharply. 'Not a word, now, please.' She snatched up her cross-bow, went to the wall and slid along it like a warrior, was gone into the hallway.

I started after her, and Hugh caught my sleeve. He muttered in my ear, 'I think we have to do what your sister says, for the moment. She's the one who knows the lie of the land.'

A wild surge of jealousy went through me like amphetamine. Suzanna was my little sister, the one that had always played cute games with Daddy, flaunting her long golden hair, flattering him. She'd always been Hugh's favorite, that much had long been obvious to me—but she'd been his favorite because she was a simpering twit. Well, that's putting it a bit harshly—but you know what I mean. But now, now Hugh was deferring to her, was telling me that I ought to take heed of her hard-won survival skills. For a few seconds I bitterly resented the fact that I'd spent the last year in a five-second flash of green light. However horrible her life had become, I wanted desperately to be like Zanna: hardened, wise, in control.

Abruptly she was back in the kitchen.

‘They’re coming,’ she said. ‘That loathsome Mahoney woman must have turned us in.’

‘Oh,’ Grace said, shaking her head in reproof. ‘I doubt Cecily Mahoney would do anything so vicious. She’s a nasty creature, true, but we’ve always managed to get along politely.’

‘That was in the old days,’ Zanna said angrily. ‘Things are different now. Everybody blames everybody else. You can’t trust anybody. Mrs. Mahoney would shop her own mother if she thought she’d get a bigger ration parcel.’

Grace regarded her appraisingly, and then nodded.

‘But who is it that’s coming?’ I asked. ‘And why?’

‘The Pox Cops,’ Zanna said, ‘the Quarantine Police. They’re coming because old bitch Mahoney has seen you guys running around outside without masks. Probably thinks you’ve crossed a Declared Buffer Zone to get here. She knows you haven’t been around for a couple of years.’

‘Not nearly that long,’ Hugh started to say. ‘But I suppose it seems—’

‘I could try to talk to her,’ Grace said. ‘Maybe she’ll understand that we’re no threat.’

‘For God’s sake,’ Zanna said in exasperation. ‘The Pox Cops will be here any minute. They have trucks parked at both ends of the street. They’ll take you away for sure. Damn it to hell. They’ll probably take me away as well... for harboring you. They don’t like harboring. It spreads the pox.’

‘Obviously we’ve got to leave,’ Hugh said. He’d been listening intently; now he’d made his mind up. ‘Everybody back into the garage.’

‘And just where do you imagine we’re going?’ Zanna asked sarcastically.

‘Out of this mess,’ Hugh told her. He stood at the door, waiting.

‘Where?’

‘We’ll take another leap forward,’ Hugh said. ‘This time, if my calculations are correct, the vacuole will unpack in normative spacetime after a little over fourteen years. The plague will have well and truly run its course by then, and life will be back to normal.’

‘Well, you’d better hurry,’ Zanna said, shrugging. She remained seated, sipping her horrible coffee. ‘They’ll be battering down the door in a few minutes. Go on, off you go.’

‘Darling,’ Grace said, frowning, ‘of course you’re coming too.’

‘Of course I’m staying,’ Zanna said. ‘I belong here now—this is my turf, I’ve earned it.’ She gestured with the cross-bow, sweeping it around to take in the darkened kitchen, the boarded-up house, the decaying civilization beyond it.

‘Zanna...’ Mom cried.

Violent hammering on the front door. An amplified voice boomed out: ‘Quarantine Police! We have this house surrounded. All persons currently in residence must leave the house. Please exit one at a time. Leave the house and walk towards the armored vehicle marked Sterile Transport. Exit with your hands in the air. Do not, I repeat, do not carry weapons of any sort.’

‘They’re scared shitless,’ Zanna muttered. ‘Poor bastards. They’re just local conscripts doing a repulsive

job. I don't think they'll risk positioning anyone out the back, not just yet. If you move fast, you should make it to the garage.'

Hugh shook his head. 'These are the authorities, Zanna. I'm sure we can make them see reason. There's no point in causing a disturbance where one of us might be hurt.' Nodding approval at his own wisdom, he started toward the barricaded door leading to the front of the house.

Zanna stepped straight into his path, cross-bow in her right hand. He stopped, taken aback.

'We can't go with them,' she told him. 'For a starter, they immediately separate the men and the women. Do you want this to be the last time you ever see Mom—or us, for that matter?'

'What? Segregated quarantine? Draconian.' Hugh was clearly flummoxed. He rubbed his unshaved chin. 'Yes, I suppose that would make sense. Still, once they see the mistake they've made—'

'Don't be stupid.' My sister barked a harsh laugh. 'You think you can just waltz out of here into a frightened circle of armed men and tell them that you've built a time machine in the garage? Mad delusions is one of the side-effects of third-stage pox.' She took Hugh's hand and drew him with some effort toward the back door, shooing Grace and me with the cross-bow. 'They'd shoot you down like dogs.' Ferdy came out from under the kitchen table, alert to the word for his kind. He tried to wag the stump of his tail. His mistress patted his head. 'Out. I'll distract them. Once you clear the back door, run like hell.'

'You're right, darling,' Grace said with sudden decision. 'Except for one thing—you're coming with us.'

'You're not listening. I'm staying. I know this scene, I'll be okay. I can talk my way out of anything.' Zanna learned past Hugh and pecked Mom on the cheek. 'Who knows, I might even still be here when you come back in 14 years' time.' She grinned. 'With any luck I'll be running the place.'

Powerful banging resumed at the barricaded front door, and the booming voice made more threats from the street. I jumped, thinking I heard someone on the skillion roof above our heads. Crunching footsteps paused in the side driveway. I opened the back door a crack. Nobody, not yet.

'Okay,' I said. 'Come on, let's go.' I darted back, gave my sister a kiss that missed her mouth and our noses banged together. 'Look after yourself, little Sis.'

Zanna gave me a satirical eye-raise, and quickly smooched our parents. She grabbed up her weapon and headed in the opposite direction, into the house.

'Go,' she called. 'God speed.'

I pushed the door wide and ran as fast as I could across the ugly, ruined lawn. Someone shouted. Something banged or cracked, not at all like the sounds of guns you hear on movies or TV shows but I knew exactly what it was and instantly I felt sick with fear. It was a quite shocking sensation, icy cold, empty-gutted, worse than anything I'd ever felt in my life. Then I had my hand on the garage door, pulling it open. Hugh paused at the opening, pushing my mother in ahead of him. He was dragging an object out of his pocket. It fell from his fingers into the unkempt grass. Shit, the remote. As he bent over to retrieve it, something buzzed past his head and smacked into the solid wood of the garage door.

'Fuck,' I screamed, 'they're really shooting at us!'

I couldn't get inside the garage because Hugh's crouching body was in the way. I leaned over as well, scrambling for the gadget. His fingers found it. He lurched to his feet, prodding at the push-buttons. A light started flashing on the remote as he vanished through the door.

And a glove-encased hand, creepy and cold with plastic, grabbed my bare left wrist and dragged me backward. I stumbled, screaming, and fell into the clutches of a big man dressed in something that looked a lot like a cheap imitation spacesuit from a bad car sale advertisement. A clear bubble covered his head, splotched patchily in the lower part of its curve by his breath. The rest of his torso was wrapped in heavy vinyl, and his boots were massive rubber. He held a rifle in one hand and me in the other.

‘Come on, bug-face,’ he said, furious. ‘You idiots think you can come and go as you please, infecting the rest of us. We’ll have you in the tank so fast your tits’ll spin.’

I screamed again. Hugh burst back out of the garage waving a length of pipe as another man came around the corner of the house; a pistol shot grazed Daddy’s arm. My father jerked back with a spasm, dropped the bar. It smacked uselessly on the grass.

‘Hold the stupid little cunt, Bill,’ this gentleman shouted hoarsely. ‘I’ll get the bald bastard.’

‘Kill him if you have to, Tim,’ Bill said, taking my other hand and wrenching it behind me. ‘You’re not getting away with it,’ he said to me. ‘You little germ pie.’ He pushed his helmeted face into mine, eyes bulging with real anger. ‘I should put you bastards out of your misery like rabid animals and fill in the paperwork later.’

He started dragging me toward the side of the house. Hugh was examining his bleeding arm, unable to believe what was happening, and the one named Tim slid toward him warily, holding his pistol two-handed, like they do in NYPD Blue. The back door sprang wide and Zanna was standing there with her own weapon cocked and aimed at the head of my captor.

‘Let her go,’ she said. ‘Or I’ll kill you.’

Everything kind of slowed down then. I was utterly terrified, cold, confused, yet focussed at the same time. The man holding me, Bill, started to swing me in front of him, to act as a shield I suppose. I could see Zanna take in the entire situation in a glance—me, the two guys, Hugh with his damaged arm, Mom’s face appearing at the garage door. She did not hesitate. A length of sharpened metal rod sprang from the cross-bow with a fierce twang. My captor’s clear plastic face mask splintered—obviously not hardened against attack by anything larger than viruses and bacteria—and the quarrel was instantly buried in his left eye.

I could feel the shock of it, the very jolt of his agony, pass into his smashed head and down through his body. His grip loosened instantly, and he fell straight down, his rifle striking my leg as he fell.

The man named Tim yelled out in shock and indignation.

‘You bitch—’

His gun swung around, but Hugh had found his fallen metal bar and he swung it ferociously from a half-crouched position, holding it with his good hand. The bar smacked meatily into the side of Tim’s knee. When I was ten years old I accidentally struck that part of my leg jumping over a brick fence, and I remember howling in pain for five minutes. Tim’s aim went wild; his gun fired into the ground.

Zanna was winding her cross-bow with ferocious intensity and speed. A second arrow dropped into the chamber; she aimed with supernatural calmness and accuracy, or maybe luck, and then Tim was flailing in pain with a bolt through his upper arm. Blood spurted. Voices were still booming out the front, and a loud splintering suggested that the brave souls stationed there were ripping all the boards off the door and windows, or maybe just driving a tank through the front wall.

I was dazed beyond any meaningful action. A hand caught me, pushed me toward the garage. Zanna, of course. Ferdinand raced past, ears back, and shot inside.

‘Move, dumbo.’

‘Okay.’ I wasn’t even resentful. We helped Hugh get all the way to his feet and pointed him to the door. Grace was gone again. Then we were inside. Zanna dropped her weapon, dragged the doors inward, snibbed the inside lock with its sturdy bolt.

‘Where’s your gadget,’ she shouted at Hugh. ‘I don’t know if the solar cells are working properly.’

‘Here it is.’ He had it in his good hand, was pointing it at the back of the dusty space. ‘The vacuole has its own power supply, it’d collapse otherwise when it everts out of spacetime.’ Always the explainer. A red light flickered, and a blast of cool air smacked us in the face. Mom was standing well to one side holding on to the frightened dog, but even so she nearly got clipped when the huge lump of lava appeared out of nowhere, displacing its own mass of air in our direction. My ears hurt; I staggered in the shock of it.

‘In,’ Hugh yelled. Grace stepped forward at once, dragging Ferdy with her, merged with the rock, was gone.

‘You two, in!’ Hugh yelled.

Outside the garage a lot of yelling was going on, and the sounds of heavy footsteps. Someone was shouting, ‘Get a stun grenade, get half a dozen of the things.’

‘Oh shit,’ Zanna said, suddenly sounding resigned, tired, ‘There goes my good citizenship award.’ She gave us a ghastly grin, and I saw that she was shivering with reaction. Dear god, the child had just killed a man. ‘I suppose this time I really will have to come along for the ride.’ Shaking her head, she disappeared into the rock. Hugh and I followed her in to the world of furry blue.

## Eight

Everything is relative. An hour previously I regarded the vacuole and its unnatural purple-blue light as cold and alien, somewhere I didn’t want to be.

Our house I'd thought of as safe and familiar. But now everything was changed. I breathed deeply, letting the fuzzy blue light flood my senses.

Zanna said, 'So what's to stop the Pox Cops coming in after us?'

Hugh said, 'Now that I've turned off the phase change, all they're looking at it is a mass of solid rock, or at least that's what they'll assume it is. Without this controller—' he waved the remote, '—they could take to it with a jack-hammer and nothing would happen.'

'Do you mean we're already time-travelling?'

'No, no,' Hugh said. 'You'll know about that when we do it. Won't she, Nat?'

'Yeah,' I said, suddenly pleased that I was now the expert. 'It's quite an experience. Spacetime implodes,' I said. 'Wildest trip imaginable.'

I looked at Zanna. She shrugged, as if all I was talking about were a fun-fair ride, something you might do at Disneyland. She was a veteran of a sterner reality. 'Well,' she said, 'when do we fix up Dad's arm? Now or in fourteen years' time?'

'Oh, let's all have a bit of a rest,' Grace suggested. 'How is your arm, dear?'

'The wound's only superficial,' he said, prodding at it carefully and wincing. 'I was very lucky.'

For a while we busied ourselves with first aid. Grace dug out an emergency kit and cleaned the wound. Luckily it didn't need any stitches, and was soon patched up with a rather dashing bandage. Then she and I put together a simple meal out of the leftovers from a dinner that had been started more than a year earlier.

We sat around the card table in the large tent and drank hot chocolate made with condensed milk out of a can. Zanna started to relax. We heard more stories of her year alone. Old Mrs. Blakeley had moved in to share our bigger house during the plague emergency and looked after Zanna for a while, and then Zanna had looked after her, and finally she'd died one night in her sleep. The old lady had known her strength was failing, but she'd always told Suzanna never to give up the hope that we would come back. Mom cried this time, and I cried too. After a while I began to nod off; everyone was looking exhausted. Ferdy snored under the card table.

I followed Zanna into the tent she'd chosen long ago. 'You can have the foam rubber mattress, I'll bring the blow-up one in and sleep on the ground.'

'I'm not used to sharing a bedroom,' Zanna said. 'Let alone a tent.'

‘We once shared a bedroom,’ I said.

‘Then we stopped. I’ve been on my own for most of a year. You’ll have to learn to sleep by yourself, Nat,’ Zanna said. ‘Although with Talbot gone, you must have gotten used to that.’

Christ. ‘No need to be so harsh, Suzanna. We didn’t desert you, you ran away. Cut me some slack,’

She shrugged, not at all penitent. ‘You’re a big girl now.’

‘I’m still older than you,’ I said.

‘Not in any sense that counts,’ she said. ‘And my name’s Zanna. Good night.’

This was insane. No one in the world has a younger sister who’s older than they are, even metaphorically. I was about to take a logical stand on this, but she was lugging the rubber mattress and her sleeping bag out into the open. Zanna, since that’s what she insisted on calling herself (what did she think, this was an episode of Buffy or something?) carried her bedding to the far blue wall of the vacuole, kicked off her boots and climbed, fully clothed, into the sleeping bag. Hadn’t even cleaned her teeth. Ferdy padded over and lay down at her feet.

I went back into the main tent. ‘Suzanna’s gone totally feral,’ I told my parents.

‘She’s had a difficult time,’ Grace said. ‘We need to be patient. It might take her a little while to adjust to being in a family again.’ And she’s just killed a man, she didn’t say, but we were all acutely aware of it. I was beginning to think that it might take the family a little while to adjust to having this new, hard Suzanna in its midst, but I didn’t say anything either. I got ready for bed and made my way to the tent in which I was to sleep alone. I was so tired that I was almost instantly asleep.

I woke up shivering with delayed shock. The amethyst light of the vacuole remained undimmed, but the green fabric of the tent reduced the illumination quite a bit. Even so, there was enough light to read the numbers on my watch. I’d only been asleep three and a half hours. I lay awake, mind racing, wondering about the Pox Cop Zanna had shot. At the time I’d been frightened out of my wits, and the way he’d been dressed from head to foot in plastic and rubber had only added to my terror, but there had been something familiar about him. I’d only half-seen his face behind the plastic mask and his voice had been muffled—but I thought I knew him. And it finally came to me: he was William Hewson from school. Older than me, a senior in high school when I was still in eighth grade, but I was a stage hand when he played Inspector Javert in *Les Misérables* for the junior high-senior high drama fest. He’d been a quiet, friendly sort of guy. After he left school, I think he got a job with the state highway department. Mass hysteria had turned him into a raging Pox Cop. Poor guy, he’d been scared out of his wits. And now he was dead with one of Zanna’s steel arrows protruding from his face.

Someone was walking about outside the tent. My skin crawled. I lay and listened. I thought I detected six feet: two bare human feet and four canine ones. Zanna was prowling about, shadowed by Ferdy. I unzipped the tent’s flap a little and wriggled my head out. My sister was about twenty yards distant, rummaging through a pile of stores. After a couple of minutes she found what she wanted, hugged it to her breasts and walked silently back to her sleeping bag.

I was intensely curious, couldn’t imagine what it was she’d retrieved. I wriggled back into my tent and, after another hour brooding on the events of the day, drifted into sleep. A small girl, I was playing on a deserted beach pounded by giant waves. The waves were the color of blood. The promontory where I stood was quite safe. The blood-colored waves exhausted themselves at my feet and retreated.

Next time I awoke was surely morning. The watch informed me I had been in bed for eight hours. That



made it morning even in a timeless world. I crawled out of my tent. No one else was up. I walked silently through the blue dimness towards the sleeping shapes of Zanna and Ferdy. The pup raised his head, saw who it was, settled again. I looked down at the sleeping form of my teenaged sister. She lay curled in a fetal position. Hugged to her shoulder, half in and half out of the sleeping bag, was her teddy bear. It was a mangy beast—she'd owned it since she was three. Storing the teddy in the vacuole was probably the most considerate thing my fruitcake of a father had ever done. I squatted down on one heel and looked at Zanna's sleeping face. Asleep, she looked more like her old self. The hardness was diminished, her ragged hair seemed waif-like in a vulnerable sort of way. I felt a surge of love and protection. Suddenly Zanna was awake.

She drew back, trying to scramble to her feet, but was caught by the sleeping bag. Half-crouched she faced me, eyes wide with fright, the teddy thrust towards me like a weapon. A single truth hit me between the eyes: my sister normally slept with a loaded cross-bow under her pillow. Oh Jesus. Oh, good Christ.

'Zanna,' I said, 'it's just me. Put the teddy bear down.'

For a second she continued to stare wildly at me. Then she relaxed. 'Hell, Natalie,' she said. 'Don't ever do that again. People have been shot for less.'

'Not in here,' I said. 'We're safe in here.'

Zanna looked around her. 'Yeah,' she said, 'I suppose we are. But we can hardly live in here forever.'

'Things will be better outside in fourteen years' time,' I said. 'Come on, let's wake Mom and Dad and get some breakfast. Then we can all go hurtling into the future in one bound.'

'It's a bit fucking scary,' Suzanna said, getting out of her sleeping bag and standing up. 'Just rip forward through time. I don't know that I'm psychologically prepared for something like that.'

'Good grief,' I said. 'If you're not psychologically prepared, who is?'

## Nine

Once again the flash of green light, the perceptual illusion of having your eyes blown out and your head ripped off, the curdled dislocation as time and space

# went sideways and reassembled themselves.

We all stumbled around blindly for a bit. ‘Good thing we had breakfast before we did that,’ Zanna said. ‘I don’t feel remotely hungry now. In fact I might throw up.’

‘Then it wouldn’t be a good thing we had breakfast,’ I said.

‘Girl’s gotta eat,’ Zanna said. ‘What now, just wander out through the wall into the garage?’

‘We proceed with extreme caution,’ Hugh said. ‘In almost a decade and a half, anything might have happened.’

‘There’ll be a pack of rabid squatters in the house,’ Zanna said. ‘They’ll think they own it. Might take some shifting.’

‘I have the property deeds with me,’ Hugh said.

‘Yeah, right,’ said Zanna, without expression, ‘the property deeds, that’ll do the trick. Squatters will run a mile at the sight of the deeds.’

‘If there is any dispute,’ Hugh said, ‘we will be very circumspect with any illegal tenants and make our appeal to the relevant authorities.’

‘Jesus, weren’t you paying attention, Hugh? The way things were going,’ Zanna said, ‘there won’t be any relevant authorities. Even the Pox Cops might have fallen apart.’

‘Epidemics don’t last this long,’ Hugh said. ‘Appropriate social structures will now be in place again.’ He spoke with complete conviction.

‘Yeah, well, let’s not stand around yacking,’ Zanna said. ‘Let’s go and see. Have you phase-changed the walls?’

I felt guilty and horrible all over again, of course, when she said that. If I hadn’t taken so much persuading to get my ass inside the lava shield the first time around, Hugh would probably have done his phase-shift trick properly and Zanna wouldn’t have made it outside before our jump. She’d have just banged into the furry purple-blue wall. But no, I’d dithered and hung about and required coaxing in by Ferdy’s nose, and so the vacuole was left all open and vulnerable... and poor silly little Suzanna had bounced out through it in search of a wild night with the Big Spew.

Well, she wasn’t little and she wasn’t silly, not any more. I decided to forget my guilt. Zanna had done okay in her year and bit Home Alone. In some ways, as I’ve mentioned, I envied her. (So what’s new?)

Perhaps Hugh took Zanna’s words to heart, because he went to the trouble of extruding a number of instruments through what he called rather gratingly a discontinuity in the fractality. He returned to the tent with the gravest expression I’d ever seen him wear, and that’s saying something.

‘Very little radio traffic, and all of that short-wave,’ he told us. ‘Nothing local. I’d hoped that after nearly 15 years the world would have recovered. Well, California, at any rate. Certainly America in general.’

‘The plague killed everyone?’ I asked, sick with dread.

‘I don’t know,’ he said. He and Grace gazed at one another in a long unspoken colloquy. ‘Frankly, I’m now very reluctant to leave the vacuole.’

‘I agree,’ Grace said. ‘We know nothing about the vectors of this pandemic. Admittedly, if everyone in America is dead, the disease will possibly have become self-limiting.’

‘Unless dogs and cats carry it too,’ I said, feeling sicker. Ferdy stirred, settled down again.

‘No pets at all left by now,’ Zanna speculated, with awful authority. ‘I’d be more worried about rats and birds.’

Oh my God, I thought, feeling sicker still. Poor Mrs. Grundy. Poor Daily Alice. My eyes ached. But after 14 or 15 years they’d be dead in any case, of simple old age.

‘Can we raise help with your radio, Hugh? A plane from offshore might pick us up at the airport, if we could make it that far. There might be abandoned cars in the streets with gas still in their tanks.’

‘Grace, I simply don’t intend to allow any of us to risk exposure to a massively contaminated ecology. Yes, perhaps somebody would hear us and send an aircraft, but I think it’s more likely that they’d napalm us as possible Typhoid Marys.’

I drew in a sharp breath, feeling as if he had struck me a blow to the belly. Even Suzanna, for all her louche bravado, was taken aback. Slowly, Grace nodded.

‘We can’t take the chance. Onward, I suppose. How awful. Next time will be, uh— Oh god, darlings, we’ll be carried forward more than two hundred years.’

‘Shit,’ said Zanna. ‘Awesome. That’s further than, than...’

‘Than the first telephone,’ I said. ‘Than the invention of toilet paper, probably. Tampons, for sure.’

‘I can find no other option.’ Hugh said. He rested his elbows on the table, and his head in his hands, shoulders shaking. After a moment, he raised his face, and I saw tears in his eyes. ‘Very well. Onward to the twenty-third century.’



We jumped, Grace told us, a further 218 years, 140 days, one hour, 41 minutes and change. This time when we went through the phase-shifted wall into the garage, we were brought to an immediate halt by a squashed Rolls Royce which otherwise was in mint condition. The Rolls must have been parked in the garage; the sudden manifestation of a fractalized lump of metaphysical lava had pushed it violently forward. It was hopelessly wedged between the lava and the doors. Not the crappy old worm-eaten timber doors, which would have caved in, or rather out, in an instant. These doors looked new, made of some sort of reinforced steel. Lots of gleaming bolts and Dayglo colors, dazzling in the new indirect lighting in the refurbished ceiling. We stood and regarded the squashed Rolls.

‘Interesting,’ said Hugh.

‘The squatters must have car-jacked it,’ Zanna said. ‘Or hot-wired.’

We were having trouble coming to terms with the idea that two centuries had passed in a green moment. A Rolls? In the 23rd century? Come to think of it, what was our garage still doing here, still standing? A mad conjecture occurred to me, and I opened my mouth to blurt out that maybe we were inside a museum of some kind, but the idea was too absurd, and I shut my mouth again. Zanna had opened the door and slid into the passenger seat of the Rolls, running her hands under the dash. 'Doesn't seem to be wired,' she said in surprise. 'Surely they can't own it.'

Oh, hell. 'The house mightn't have been invaded by squatters,' I said. 'Some rich family might live here now. They might think this is cute. That was centuries ago, after all. Look at the way the doors have been done up.'

'But it's still our house,' Grace cried indignantly.

'Come on, let's get out of here,' Zanna said.

Getting out of the garage was easier said than done. The huge steel doors wouldn't budge. We started hunting for a key or a switch that might activate them.

'Hey, check this,' Zanna said, inspecting a row of miscellaneous trophies hanging from one of the garage's old timber beams under the clean new ceiling: half a dozen old license plates, a hub cap, a couple of ancient headlights, a few odd implements, Zanna's abandoned cross-bow and a dozen quarrels arranged like the rising Sun. Zanna was up onto the roof of the Rolls, wrenching her cross-bow free of the rafters, before anyone else could say a word. She pulled the bolts free and bounded down to the floor. 'Kind of them. I dropped it in here yesterday.'

'Two hundred thirty-three years ago,' I said.

'Kinder still,' she said.

The way she was grinning you'd think she had just been reunited with a long-lost friend, not a junkyard weapon.

Very calmly, Grace said, 'Hugh, look at what's happening to that car.'

Hugh misunderstood. 'Darling, it was damaged when the vacuole came into phase with the normative four-space continuum. The fractal surface of the expanding constriction pressed against the—'

'I know all that,' Mom said, not batting an eyelid. 'Have another look at the car.'

We all took a closer look. We all jumped back. We all gasped simultaneously.

'It's melting,' Grace said.

The bodywork, the heavy steel wheels and rubber tires, the undercarriage slumped, sagging like softened toffee dropped on a hot plate. My own jaw sagged. I held out my hand tentatively, but no excess heat was coming off the collapsing car. The windows didn't crack, either—they just bent and curved in on themselves like something in an animation, folding down into the runny body of what a moment before had been a crunched but beautiful old Rolls Royce.

'It's a weapon,' Zanna said, cranking her cross-bow and fitting a quarrel. 'Back to the blue place!'

Hugh held up his hand. 'Don't worry,' he said, tense but unafraid. 'I think I know what's happening. Good Lord, this is extraordinary. After such a catastrophe? I can scarcely credit it.'

The dissolved elements of the car were separating into streams of metal, rubber, wood, glass, and those streams were running all of their own accord into neat piles along the side of the garage. Some of them ran uphill. Creepiest thing I'd ever seen, but weirdly beautiful in its way.

'Very well, dear,' Grace said, folding her arms in a thoughtful way. 'I admit that this thing defeats my own powers of imagination, let alone reason and experience. What is it, O all-knowing genius?' I heard an unaccustomed rasp in her tone.

Hugh glanced at her sharply for a moment. 'Well, I can't be certain, darling, but I suspect that this is due to nanotechnology. The vehicle is being broken down to its constituents at the molecular level.'

I knew about molecular nanotechnology, you couldn't shut people up about it in the year we'd left. Brave new science of the twenty-first century, coming soon to a store near you. Little machines about the size of bacteria—just large molecules, really, built of a few thousand or a few million atoms. Television experts insisted that machines that small would be built any decade now, all-purpose doodads that with one hand would calculate as well as computers, while scavenging and assembling ordinary atoms like carbon and silicon and nitrogen and other stuff with the other, compiling them into all kinds of great consumables. Expect it by 2050, they'd told us, smiling cheesily. Of course they hadn't been expecting a plague.

I'd never thought you could build a Rolls Royce with it, though. Or pull one apart.

'Wicked cool,' I said. 'Do you think the new garage doors are made of that stuff too?'

Hugh rubbed his jaw with a mild rasping noise. He definitely needed a shave. 'Could be. In which case, it might contain smart materials. I wonder how smart?' He stepped forward to the solid barrier and said politely, 'Pardon me, door, I wonder if you'd mind opening for us?'

Silently, instantly, gracefully, the panels of the steel door slid across each other like a series of eyelids opening. Daylight flooded in to the garage. Four cautious humans and a dog stepped forward to see what we would see.

'Damn!' Zanna muttered, keeping her bow at chest height.

'Oh my,' said Grace in dismay.

'Major nanotech breakthrough in art construction,' Hugh observed, fascinated.

'Woof woof woof woof,' said Ferdy, keeping close to Zanna's heel but refusing to take this lying down.

I stood my own ground, stared back and forth, up and down. After a moment I wailed, 'They've taken our house away! How dare they? I want my bedroom back!'

It was extremely hard to absorb what was there, in the plot of land where our dear old house, and half of horrible old Mahoneys' house, had been a few minutes before. A few minutes plus two centuries, that is. What loomed above us, its two gigantic feet deep in the soil of our garden and lawn, was a monstrous figure of a winged woman, the size of a ten story building, at least a hundred and twenty feet tall, with an austere, beautiful face blinded or masked by a black band across her eyes. She held a sleek, cocked cross-bow in an attitude of powerful determination. She was made out of some substance that looked like marble, and she seemed to be breathing! It was a statue of Justice in Rebellion. It was a monument to Dispassionate Courage. It was—

'Shit,' I blurted. 'Zanna, they've gone and built a statue to your memory!'

I dragged my gaze away from that astonishing sight and looked around what had been our suburb. Quite

a shock, like finding one of those old paintings of your local harbor and its shoreline before the city was built there, all soft vegetation and carrier pigeons or something in the plentiful trees and running streams where later there were high-rise buildings everywhere, and railroads and billboards and busy streets. This was just like that, but in reverse.

This was a major real estate catastrophe. Of course, a true professional optimist might see it as an unparalleled opportunity. I was hyperventilating, too shocked for optimism. Everything was gone except the basic landscape. And a few bizarre extras that certainly hadn't been there two hundred years earlier.

'Peak's Hill looks rather odd without the church,' Grace remarked in a rather flat tone.

'The supermarket's gone!' I screeched. 'Where will we get our food?'

Zanna sent me a derisory glance. 'You're stuck in the past, kiddo. There haven't been supermarkets open for nearly a year.' She caught herself, grimaced. 'In my time, anyway. Looks like they've done an even better job of smashing things up this time.'

'Fascinating,' Hugh was saying, walking toward the living statue. 'Absolutely fascinating.' He held out one exploratory hand, touched the marble foot in its steel sandal. Nothing happened. He kicked it lightly with his own foot.

'For heaven's sake, Hugh,' Grace said in exasperation, 'do use some common sense! We don't know what—'

The statue's foot moved. It lifted from the long grass, ponderous as an elephant's leg swinging into action, and set itself down a half a yard away. If it had gone the other way and come down on Hugh, it would have squashed him to pulp.

In sudden fright, Hugh jumped back. Ferdinand barked sharply.

Zanna stepped forward, hands on her hips, looked up and up at the romanticized likeness of her own face.

'Hey, cut that out!' she shouted. 'Somebody could get hurt.'

I cringed, expecting the monument's great stone hand to cast aside its cross-bow and reach down like King Kong, lifting my sister up against its great breast. Nothing of the sort. Wind blew across open stretches of grass where once a hundred or a thousand suburban homes had bustled with human life. A pigeon cooed, and another answered it. An immense pink pillar glistened in the sunlight over near the intersection of Cole Porter St and Barrow Road, or where the intersection had been, but did nothing in particular. The massive gray tangle of wire in the distance where the orthopedic hospital had been just sat there, inert. I turned my head, trying to find anything at all I could recognize. A blue inverted pyramid stood on its apex like a geometric ballet dancer; it was turning ever so slowly, I realized, clockwise, without a sound.

No windows in any of these scary objets d'art. Nothing human, except the statue of Zanna, and that was nothing you'd wish to take home to meet the folks.

'It wants to know why your implants are dysfunctional,' a man's lilting voice said in my ear. A young man. Not Hugh, who was still prowling around the mighty feet of the monument. I did just what you'd expect.

I screamed, and jumped away.

There was nobody in sight, just my family.

‘Oh, I do apologize,’ the new voice said. ‘Didn’t mean to startle you.’

Zanna had obviously heard the voice too, for she grabbed up her cross-bow. Grace was frowning, her eyes darting behind me, to either side. Clearly she couldn’t see anything either.

‘Where are you?’ I called, heart pumping.

‘Are your virt links out as well? Just a moment.’ About where the McDonald’s Golden Arches had been, a couple of hundred yards away, a plug of dirt popped out of the ground and a good-looking young man rose into view on a column of gleaming yellow plastic. I gasped; Zanna guffawed.

‘When in Rome, or maybe Jakarta—’ Grace murmured quietly, which greatly impressed me.

The young man was indeed perhaps of Indonesian appearance, or maybe Filipino, but was certainly stark naked.

His hair was dark and quite long, and he had a short beard. Without looking as distorted as one of those muscle loons like Arnie Schwarzenegger, he was superbly well built: wide shoulders, deep chest, powerful arms and strong legs, and—

I looked away.

Zanna didn’t.

‘I thought the Romans wore togas,’ she said. ‘You think we should—’

‘Not quite, dear. No need to undress out here in the open. I just mean that we shouldn’t be alarmed if other people in other times have different dress codes from our own.’

The guy was walking in a loose-limbed amble toward us. Abruptly he did a conspicuous double-take, stopping dead in his tracks, looked up at the monument and back down at Zanna, then up again.

‘That’s you,’ he called. His English definitely had that very faint Asian lilt. ‘Isn’t it?’

‘Looks like,’ Zanna called back. She stayed where she was, at our side, but I could tell by the way her arm muscles had relaxed that she wasn’t scared any longer. It must be comforting to find that you’ve turned into a living legend overnight.

‘No wonder the Grand One’s interested,’ the young man said, approaching. He bowed when he reached us, held out both hands. ‘Benisons upon you. I’m Barong. I’ll be your interface this afternoon.’

Hugh stuck out his own hand in a manly gesture, and took one of Barong’s. The naked youth looked at this clutching grip for a puzzled moment, and then allowed Hugh to shake their linked hands up and down, as if he’d never done such a thing before.

‘Hello, Barong,’ Hugh said politely. ‘Pleased to meet you, I’m Dr Hugh D’Anzso.’ He identified each of us by name, which showed more social skill than I’d expected, and each of us in turn shook Barong’s hand, including Ferdy. The firm, soft touch of Barong’s hand gave me pleasant goosebumps. ‘I assume the Grand One is an AI?’

‘I’m sorry, a what?’

‘An AI—an artificial intelligence.’

Barong's expression clouded. 'I fear that sounds rather offensive. The Grand One is the Mind of this world and its moon.'

Grace smiled, suddenly happy. 'Gaia!' she breathed.

'I apologize if I gave offence,' my father said. 'I meant a consciousness constructed of computers, nano-computers perhaps, rather than of flesh and blood like us humans.'

'Oh, I see.' The young man's expression cleared, and he smiled radiantly. He really was terrifically handsome. I was starting to forget his nudity and just take him for granted as a person. 'That indeed is how the Grand One began, before the Spike. Now it's a globally dispersed awareness. But everyone knows that. Why do we rehearse the obvious, Hugh?'

I couldn't understand a word of any of this, but Hugh seemed to be glomming it without any trouble, and Grace watched with a keen expression of interest. This was doubtless the kind of classified stuff Hugh had worked on at the Ferguson Foundation, where he'd met Mom, several years before I was born. She'd been involved in programming supercomputers to develop common sense—'Far harder than training neural nets to play Grandmaster chess or run a factory,' she told me once—but she'd given it up when the military who funded the research made it clear that her computer code would be used to run robotic weapons systems.

I vaguely recalled their late-night discussions of a social dislocation they called the Spike, or the Singularity, some amazing or horrifying thing they half expected to erupt in the medium-term future: a massive convergence of exponential technologies that would change everything in the world in what would amount to an eyeblink, once it all came together. A mad friend of theirs had written a book about it. It all sounded like ridiculous science fiction to me. Yet now we were actually in the future and everything we saw around us looked like the most lurid kind of science fiction movie, so maybe this Spike thing had happened after all.

'The Grand One invites you to come with me for genome scanning and repair,' Barong told our parents. 'We'll soon fix up those defective implants.'

'We don't have any fucking "implants",' Zanna told him between gritted teeth, her expression ferocious, 'and we're going to stay that way, bozo.'

'Apologies, my name is Barong, not Bozo,' the young man said evenly. 'Here is its meaning: There is an ancient legend of the battle between the lion lord Barong and the wicked witch Rangla. Her magic reflects the knives of his supporters back against him, but his power prevents this attack from wounding them.' He shrugged, and looked down at his bare toes. 'I am sorry, there's no reason why this tale should interest you.'

'Not at all, my dear,' Grace told him. 'We find everything about you fascinating. Truthfully,' she added, placing one hand in a gentle way on his bare shoulder, 'I'm having some trouble seeing how all these astonishing changes have taken place in a mere two centuries.'

Barong reached across with his right hand to touch hers with equal gentleness.

'There was a terrible plague, you see. That is one of the old words, "plague". It means that bodies are damaged and many of them cease to operate.'

'Yeah, people get sick and die,' Zanna said witheringly. I couldn't understand why she was being so crabby. I mean, this guy was gorgeous.



He blinked. Almost instantly, he nodded. ‘Yes, that is another way to put it. We prefer not to be so blunt, mistress. But now I’m afraid I must ask you to accompany me for the genome scan, where you will—’

‘I’ve already told you, we’re not going anywhere.’ Zanna’s gaze was direct and fearless. ‘Certainly not with some bozo who wanders around without his pants on.’

The youth looked even more confused. ‘Oh, I’m so sorry, I really haven’t made myself clear. The Grand One is not issuing an invitation, even if it is polite to express it in such terms. I fear you must come with me. You cannot be allowed to roam the world without functioning implants.’ He smiled delicately. ‘It would seem to us as improper as my lack of formal attire evidently seems to you—and for that discourtesy, in turn, I offer my deepest apologies. Now, come.’

‘No,’ said Hugh, with unexpected firmness.

‘We really can’t, you see,’ Grace added.

‘Not on your life,’ Zanna chimed in.

Without warning, hot blue and scarlet flared in the distance. A tremendous roaring explosion resounded across the open landscape. We all jerked around, stared at the gray mass of tangled wire in the distance. Brilliant sparks leaped about it, rising in a sheet of transparent fire.

‘Corona discharge,’ Hugh said shakily.

Coolly, Barong told us: ‘The Grand One realizes that you do not yet quite grasp your situation. Here is a lesson to help you understand how matters must be. Don’t be alarmed, your four-footed friend is not being harmed in any way.’

‘Ferdy?’ cried Zanna, frightened for the first time. She darted forward, hand outstretched to seize the dog’s collar. At the same instant, a searing beam of light blazed from the corona storm. It struck Ferdinand like a bolt of lightning, with a sizzle of burned hair, and the poor animal gave a single terrified yap. Then he went up into the air, lofting above our heads, and hung there suspended, eyes rolling, tongue extended from his open muzzle, panting in sheerest fear.

‘You said you wouldn’t hurt him, you bastard,’ Zanna screamed, punching the surprised youth with her hard fists. He backed away, warding her off.

‘Really, mistress, trust us, the beast will not be harmed. It is simply receiving its implants. Look—’

I thought I was going to be sick. Ferdy was turning transparent; I could see through his fur to the skin and then the peeled muscle, and finally the internal organs. His bones glowed like coals. Organs and intestines were blotches that pulsed with his blood. And something drastic was going on inside his body, inside his brain. Sparks of light wove and darted, shuttling like some magic seamstress’s sorcerous needles.

‘Put him down,’ I shouted. ‘Put our poor dog down at once!’

The glowing coals faded. Ferdy’s red muscles closed up, and his fur wrapped him once more. As the beam of light faded, he sank back to the ground, and crouched there, trembling terribly. Zanna ran to him at once, crouched at his side, rubbing his head and back, crooning, whispering soft encouragement, tears in her eyes. She glanced back expressionlessly at Barong, and then at Grace and Hugh.

What happened in the following few seconds is a thing familiar to every family, although it doesn’t occur very often.

Mom and Father exchanged a single piercing glance, looked back at Zanna. Mom caught my eye in the same movement, and I was included seamlessly in the common moment of insight and agreement. The family had assessed the situation, found it dangerous beyond belief, chosen to deal with it in a single fluent response. I nodded my head the tiniest bit, and Mom's upper eyelid twitched her acknowledgment. Zanna rose in a weight-lifting squat, bearing Ferdy in her arms, and started toward the garage.

'Thank you for taking us into your confidence,' Grace told the youth. 'Of course we shall be happy to visit your master.'

'Not "master",' Barong said. 'The Grand One is the mind of this world, and we are parts of it. Well, all of us except yourselves,' he said, smiling joyfully, 'and that will soon be put right. Where is the mistress of the bow taking her four-footed friend?'

'Oh,' Hugh said in a light tone, 'there are some private treasures we would like to gather up from the garage before we visit the Grand One.'

'I'm afraid I cannot permit any of you to leave my sight,' Barong said.

Better and better, I thought to myself. He's walking right into it. My skin and innards were crackling with adrenaline, a drunken mix of anxiety and eager readiness, the sort of state our prehistoric ancestors must have experienced when they surrounded a wounded lion on the veldt.

'Of course you can't,' Grace told him in a soothing voice. 'Come on, come with us, you can help us carry our treasures out. We won't need this old place any longer. What is it, anyway, a kind of museum?'

She was walking in a gait that almost looked normal, but I could tell that her nerves were screaming with the same tension that buzzed in mine. The youth blinked again, obviously transmitting an update to his network lord, getting back his instructions in a split-instant. He nodded, then, and followed us toward the half-open doors.

'After the Spike, and the Great Dying that led up to it, the few surviving mehums kept as many of their memories as they could, telling tales and singing songs. A lot has been lost, however, along with the old cultural context. I don't understand much of what happened myself.'

'"Mehums"?' I followed him into the dimness of the garage. Of course I didn't try to close the doors behind us. Hugh had his remote out, and was keying in the phase shift.

I saw the flash of Barong's white teeth. 'Mehums? Short for "mere humans",' he said. 'It's how people thought of themselves after the Grand One transcended, and then brought us into communion.'

Zanna stood with her back to the wall of lava, Ferdy shivering in her arms, waiting to pass through into the blue place.

'Go,' Hugh said, as the light on his remote changed to red.

Zanna moved forward—and bounced off.

'What the hell—? Daddy, it's still solid!'

Grace stepped forward, peered closely at the lava wall.

'Oh, fuck,' she said. 'It's infested with a layer of MEMs or nanoids, unless I'm mistaken. They're probably forming a monomolecular shell. Looks like Brownian motion.'

I moved forward myself and stared at the vacuole from a few inches. The surface was seething with a ceaseless ripple of— well, who knows, but it was obviously some sort of advanced technology. And it was blocking our entry.

‘Don’t worry,’ the youth told us. ‘The small machines are examining this unusual phenomenon. Soon they will begin taking it apart and mapping it. Your "treasures", as you call them, will be unharmed.’

Hugh was trying to scrape the surface clean, picking at it with his fingernails. He withdrew his hand with a grunt.

‘It stung me,’ he said, sucking the edge of his palm. He found a spade in the racks overhead, tried again to scrape a gap in the infestation. The edge of the spade instantly curled and started to drip on to the floor, just as the Rolls Royce had done. Hugh dropped the tool with a yell.

‘Enough,’ Barong said in a voice suddenly stern and mature. I couldn’t help thinking that it was no longer him speaking, but his terrible master. His owner, more likely. ‘Let us return now to the inner chambers. You will not be harmed, and your possessions will be reconstructed for you in due course.’

He spun around lithely, and the doors of the garage sprang open without any touch of human hand.

And insight, to my dazzled surprise, told me what to do.

‘Turn the vacuole off, Dad,’ I yelled.

‘What?’ He’d picked up the deformed spade and was trying once again to batter his way through the wall of impenetrable nanoids.

‘Give me the remote, Hugh.’ I pulled the thing from the clip on his belt and pushed the button I’d seen him use several times.

The blast of air hit us again, but this time from behind, carrying grit from outside, as the vacuole imploded away from our reality into its own constricted dimensions, snatching away the physical support from beneath the crust of nanoids. The creepy stuff simply fell to the concrete floor, and slowly streams of it started to creep back toward the walls.

‘Now!’ I shouted, and slammed the button next to the red illuminated diode.

The vacuole inflated again back into our universe, instantly, pushing aside the air that had just rushed in to fill the gap left by its abrupt absence. My ears hurt. I ran to it, stuck my hand into its lava-like wall. My fingers vanished, my hand, the lower half of my arm.

‘Yes! Come on, Zanna!’

My sister hurled herself and Ferdy at the wall, vanished. Grace was gone too, then, but Hugh waited, damaged spade in one hand, holding out the other for the remote. ‘Go, Nat,’ he said.

And like a lion pouncing, powerful and smelling of sweat, Barong leaped past him and seized my hand with the small machine still in it. I refused to let it go, twisting away from him, half in and half out of the vacuole. A brilliant flash of light struck the garage. The AI’s beam was back, searching like a living tongue of light. Barong wrenched my arm painfully. I dropped the remote, yelling with indignation. The raw beam of intelligent light tore at the open doors of the garage, ripped them away, sent them spinning into the air.

With a jolt that must have bruised him and hurt his wounded arm, Hugh threw himself on both of us.

Barong and I tumbled together through the vacuole boundary. Furry blue everywhere. Hugh fell over us, dropping the spade, grabbing for the remote. So did I. Too late. The young man, eyes appalled by the strangeness of this place but driven by the need to serve the Grand One, lunged at the gadget and one long, hard finger struck a random button.

Our heads seemed to split apart. Green light flashed. Time jumped.

‘Bad choice,’ Hugh muttered, face screwed up from the transition. He plucked the remote from Barong’s shocked grasp, backed away into the blue nowhere. ‘Welcome to the 55th century.’

‘The year 5445, near enough,’ Grace said, watching us with concern. She’d always been good with numbers.

Barong screamed. It was a piteous cry, the sound of someone separated from his family, his world, his life. His god.

## Ten

Poor Barong, poor godling’s child. He’d been so masterful as part of the Grand One. His own little mind had contributed its mite to the great sea of cosmic consciousness and received insight and wisdom in return, magnified a thousandfold. Now he must stand on his own two feet, do his own thinking. He’d

# never done that before—and he wasn't much good at it. Zanna and I elected to help him.

How to dress in clothes was the first thing we taught him, which I couldn't help thinking was rather a shame. We got him a pair of Hugh's trousers. But Hugh was burlier than golden Barong. With my father's trousers bunched up at the waist and held there with a belt that needed a new hole for the buckle, he looked a complete clown. It was too tragic. We made him swap the trousers for a strip of pale green bed sheet from Zanna's tent which he wore as a sarong. That way he still retained the minor god image while conforming to our own dress sense.

Watching the poor boy trying to think was the real eye-opener. You'd ask him a question and see him go still and dreamy, waiting instinctively for the AI to kick in. Nothing happened, of course, warded as we were inside the insulated domain of the amethyst place. Barong quickly showed signs of anxiety; his fingers would twine around each other, his face would twitch, he'd begin to mutter.

'The poor sap will be crazy as a loon in a week,' Zanna said in her best diagnostic manner. 'We'll have to start at square one with him.' He sat a ways off in a deck chair staring miserably into the fuzzy blue yonder. 'Hey, Barong,' she yelled, 'come and do some homework.' The beautiful young man shambled over—a young god gone troppo. 'Now look, pal,' Zanna said. 'Try this: As I was going to St. Ives I met a man with seven wives. The seven wives had seven sacks; the seven sacks had seven cats; the seven cats had seven kits. Kits, cats, sacks, wives—how many going to St. Ives?'

'What is a kit in this particular context?' Barong wanted to know, worried out of his wits. 'I do have the word in my own personal lexicon. It means equipment,' he said, frowning horribly, 'but I have no understanding of how a cat could have seven equipments. The Grand One would have made everything clear in an instant.'

'Yeah, well, the Grand One is a bit conspicuous by its absence,' Zanna said. 'What are baby cats called?'

'Oh,' Barong said, brightening up. 'Kittens.'

'Excellent,' said Zanna. 'Now put two and two together.'

A look of intense annoyance flashed over Barong's handsome face. 'I'm not stupid,' he snapped. 'Four.'

Zanna and I collapsed in a fit of giggles.

'I fail to see how the correct answer to a simple sum can be the occasion for mirth,' Barong said.

'Zanna was just using a figure of speech,' I said. 'A metaphor. Believe me, I'm an expert in this field. We're not laughing at you, Barong. You've just made a witty joke without trying, and we found it pleasing. Look, if the seven cats have seven kits, and the word for a baby cat is kitten—what is a kit?'

'I suppose it is a lazy way,' Barong said, 'of saying kitten. But Suzanna, why didn't you utter the correct word in the first place?'

‘It doesn’t scan,’ Zanna said. ‘But answer the question—how many going to St. Ives?’

‘Well, that’s easy,’ Barong said. ‘Two thousand eight hundred and one.’

I stared at him, croggled. ‘What?’

‘Seven to the power of two is 49, the number of sacks,’ he explained patiently, ‘and to the power of three is 343, the number of cats, and to the power of four is 2401, the number of kits. Add them all up, plus one for the husband, and the answer is 2801. You hardly need the aid of the Grand One to see that.’

‘Wrong,’ Suzanna told him. ‘One. One person is going to St. Ives. The speaker.’

‘Oh, yes.’ Barong was crestfallen. ‘The people and sacks and cats and kits he or she met were going in the other direction. This is a matter of logic. The Grand One is the very embodiment of logical meta-systems. It is unnecessary for a mehum to attempt the exercise of logic unaided.’

Zanna sighed.

‘That was then. This is now. And stop calling us "mehums", you thick mehum. We’re human people. We have dignity. We have cats and kits. Cats and kits and AIs don’t have us, and they certainly don’t carry us in sacks. Not even away from St. Ives, wherever that is.’

Despite myself, I was madly impressed by this outburst. And looking from Zanna to the young man’s beautiful mythic face, all frowns and twisted mouth, I thought that even Barong was starting to get it. Get independent logic checking, and get figures of speech, metaphor and metonymy, and who knows, any day now he’d get litotes and catachresis as well. And all without help from his implants and the Grand One’s whisper at the back of his under-trained brain. Wicked cool.

We went together to see how Hugh was doing with his reconnaissance of the world beyond the furry edges of the vacuole. He and Grace were conferring with his instruments.

‘As far as we can judge,’ Grace told us, ‘we’ve almost certainly fallen an additional three thousand two hundred and three years farther into the future, plus around five months. There’s no telling what might be waiting for us outside.’

‘The AI could have digested the entire Earth and spun its atoms into a Dyson sphere made of pure computronium,’ Hugh told us.

‘That seems unlikely to me,’ Grace reassured us, seeing our stricken faces. ‘But I have to admit it’s a possibility. With mature nanotechnology, I estimate that it would require less than a millennium to disassemble Jupiter and the other gas giants. We’re now a very long time past the exponential Spike, and it’s hard to judge what limits a system-wide AI would have.’

What? Talk about paving over the planet. But Barong had winced again. ‘Please, madam. It is the Grand One. There is no call for disrespect.’

I said, ‘What the hell’s a Dyson sphere? Are you telling me someone would tear the whole goddamned solar system apart to build one of these gadgets? Am I going to have to give you all an improving lecture on the evils of imperial globalization?’

‘In fact some people we worked with have concluded that this might be the long-term solution to the energy problem,’ Grace said, shrugging, her mouth twisted. ‘Maximal utilization of the solar flux.’

‘You can’t be serious.’

‘Here’s their reasoning: most of the matter in the Earth is wasted, since humans and the rest of the ecology use only the surface, the lower air, and the crust down to a few miles below the surface. Even less of the ocean. The rest does nothing but provide gravity and heat. If we broke it all down with nanomachines, it could be turned into a great series of rings or bubble habitats circling the Sun at the same orbit as the Earth. Billions or trillions of artificial worlds to capture the immense quantity of solar energy currently wasted in empty space.’ She paused, crossed her eyes in a satirical squint. ‘Very scientific.’

‘The analysis appears impeccable,’ Barong said in the silence.

‘Totally loopy, of course,’ Grace added. ‘Out of their trees. Cut off your head to cure a headache, that sort of thing.’

Barong winced again, and I felt uncomfortable even as my own head whirled. (This was the kind of mad thing our parents had worked on together? God, no wonder Grace had resigned.) For Barong, such schemes were probably part of the hallowed long-term plans of his beloved Grand One—and besides, what we’d done to him was pretty much the same as hacking off his head to cure a minor headache. He’d been perfectly happy, in communion with the global AI, Borg boy. Sure, his liberty and humanity were hopelessly compromised, but hey, don’t knock it if you haven’t tried it... Yeah, right. Still, it was only too painfully obvious that he felt damaged, felt he’d been hijacked and kidnapped and even now was being restrained from rejoining his god, his machine Big Brother.

‘Speaking of cutting off heads,’ Zanna said tensely, ‘didn’t anyone else find that last little performance a bit... fishy? Flashy?’

Grace met her eyes with an acute glance. ‘The sturm und drang? Now that you mention it, I did find it rather over the top.’

‘What?’ I said intelligently.

‘Christ, Nat,’ my sister said, ‘it was as vulgar and improbable as the worst 1950s’ B-grade Hollywood sci fi shocker. And I should know, I watched most of them on TV while they were still broadcasting, it’s all they showed in the third month of the plague. Almost as popular as *Spin the Bottle*.’

Suddenly Hugh was looking very interested indeed. ‘Family pow-wow time, I think.’ He pulled his chair around, motioned us into a huddle. Barong hung back. ‘Come on, son, don’t be shy.’

‘Sir, I am not a node of your family network—’

‘Pipe down and join us. As of this moment, Barong, consider yourself a fully-fledged member of the D’Anzso tribe. We might be the last of our kind left on the planet.’

‘Damn,’ I whispered to Zanna, ‘isn’t there a law against marrying members of your family?’ She gave me a strange look, before Hugh rapped for order.

‘Suzanna, I applaud your insight. You’re suggesting that what we just suffered was nothing more than a contrived performance?’

‘What do you think? Flashing lights and wild static electricity and levitating poor Ferdy and, I mean, chasing us with a goddamn Biblical snake of fiery light. Cue Industrial Light & Magic—’

Now that she put it that way. I wondered what Professor Vivian Sobchack would have said about it.

‘Actually, you’d think the AI could have just immobilized us with the nanoids in the garage. They must have been under the thing’s control.’ But then Barong wasn’t a slave, exactly, was he? Maybe control was... spread out. Disseminated.

‘It certainly has a taste for the Gothic,’ Grace said. ‘Not to say the grandiloquent. Consider the statue of Suzanna.’

‘She is a memetic hero for the mehum,’ Barong put in softly, eyes lowered. ‘The memorial was the work of an admiring mehum artist in the 22nd century, not of the Grand One itself, of course.’

‘Hmm.’ Hugh toyed absently with the remote, which made me nervous. I really didn’t want that ferocious Mind outside to come charging in. ‘So why the theatrics? It can’t have been intended to impress us—we’re no threat to a global machine intelligence.’

Grace said in a voice so quiet and dry it terrified me, ‘I think it’s broken.’

Barong gave a cry and squeezed his eyes shut. ‘Madam, you speak of the—’

‘—Great Big Banana, yeah, yeah,’ said Zanna without a grain of sympathy. ‘Really, get over it. You know, that would make sense, wouldn’t it. If they slapped the thing together in a crash program while the rest of the world was in plague meltdown...’

Hugh nodded. ‘The technological convergence went wrong. Military and medical emergency authorities must have poured the whole nation’s brainpower into a concerted effort that would make the Manhattan Project look like, like—’

‘A science fair exhibit?’

‘Pipe down, I said. There are a lot of ways a crisis could have sent the program along very dangerous bypaths. I imagine the oversight committees would have been pressured to act with perilous leniency. The sheer software burden alone...’ He trailed off, a horrified expression on his face. Grace was nodding, gray-faced herself. I was pretty much out of the loop by this point, but Suzanna was watching them both with the keenest attention. She’s always been the one who scooped the gene pool, and the D’Anzso pool was damned impressive. I only won the consolation prize, so spend my life limping two or three steps behind. I’m not saying I’m stupid. When I was 21 I had a Masters in cultural theory from UCLA, but what good is that sort of thing when it comes to understanding the twenty-first century? Or earning a decent living, as I quickly found to my distress.

‘So what stops the thing from collapsing the 6-brane charge into an extremal singularity?’ Hugh wondered aloud. And I used to complain about Jacques Lacan’s mad Freudianism. The more they know, the more they babble.

‘T-theory does not allow Bott intrusions within an everted high topology,’ Barong said. The man was a fount of knowledge, even if his common sense was minimal.

Grace pounced, eyes brightening. ‘T-theory? We know M-theory and a little of F-theory—’

‘I am unfamiliar with these appellations.’

‘M-theory is an 11 dimensional superstring spacetime construct with solitons in the  $SO(32)$  periodicity. F-theory would have carried forward unification into a 12-dimensional—’

Zanna broke in, ‘So T-theory is for thirteen dimensions,’ and simultaneously Barong and I said, ‘Triskaideka-theory.’



Everyone stared at me, Zanna open-mouthed.

‘Some damned deconstructionist rubbish, I suppose,’ Hugh muttered sourly.

‘Not at all,’ I said, reddening. ‘A commonplace of my realtor studies.’ I let them stew in their own juices for a long beat, then said, ‘How many hotels have you seen with a thirteenth floor?’

‘Good grief,’ my father said, getting it at once. ‘In this day and age.’

‘Well, back then, anyway,’ I said with a shudder. So long ago! First a year, then fifteen, two hundred-odd, and now more than three millennia, lost forever in a flash of faux green light and a momentary headache. Everyone dead—Deb, Talbot, even the healthy ones who made it through the horror. Tears leaked from my eyes; I brushed them away with the back of my hand. ‘Tris... Triskaidekaphobia, see?’

My mother reached across and took my hand. Luckily, Zanna kept her mouth shut. By unspoken agreement, we shelved the matter of the mad AI Mind for the moment. Its shadow loomed, though, in the back of our own.

While Hugh and Grace attempted to evaluate what was likely to await us outside the safety barrier of the vacuole’s lava-like wall, we stayed put inside its security, and Zanna and I attended as best we could to Barong’s social education. Hugh pattered about with the few electronic instruments he’d managed to haul into the spacetime constriction along with the tents and a supply of food and water. The Manila plague had arrived inconveniently soon. Still, he had the short-wave radio, a video portapak, a recordable DVD player, plus various aerials and makings for antennae.

For the moment, he was contenting himself with protruding these detectors out through a discontinuity in the vacuole, phase-shifting it on and off in short bursts, without of course doing anything so rash, this time, as actually pushing his head outside. The wires and metal poles went through okay, as far as I could see, but again nothing useful came trickling back down the wires—even less than in the 23rd century.

‘The whole planet is a radio-free zone,’ he told us gloomily over a scratch meal: probably dinner, but as the light hardly changed inside the blue place we tended to sleep when we got tired and eat when we were hungry. In a weird way, we were jet-lagged. ‘No FM music stations, no AM talkback, no emergency channels operating, no television commercials or programs, no ham radio, no CB truckers—nothing.’

He flicked the dials. Crackling and hissing.

‘That’s the natural electrical activity in the atmosphere,’ he told us. ‘Lightning strikes all around the world. Auroras at the north and south poles. Cosmic rays.’ He grimaced. ‘The cosmic background radiation, for that matter. But no people, and no AIs.’

‘Hugh,’ Grace pointed out, ‘this is thousands of years after a technological singularity. At the Spike, the rate of technological change went infinite—effectively, if not literally. There’s no way we can guess what preposterous methods they use now for communications. Whoever’s left out there might be modulating neutrinos, or gravity waves, or tachyons. How would we know?’

Hugh switched off his machines in disgust. ‘Well, yes and no, Grace. Obviously people’s brains can’t detect neutrinos, which buzz right through light years of solid lead. And no living thing could detect gravitational radiation, because it would need to be thousands of miles long—’

‘A forest,’ I said. ‘What if all the trees have gotten linked up by genetic engineering? Wouldn’t their

branches and leaves and stuff make up a kind of really humungous aerial?’

Hugh shrugged. ‘Perhaps. As for tachyons—’

Barong said: ‘You mean superluminal particles?’

‘Yes.’ Hugh seemed half annoyed at being interrupted all the time but half pleased that Barong was coming out of his shell. ‘But they don’t exist. Or at least they’ve never been detected.’

Barong looked surprised. ‘True, sir, but tachinos do exist.’

My father was dumbfounded; a big happy grin spread across his face. ‘Supersymmetric unification? Sleptons, photinos—’

‘Indeed. The Grand One used tachino wavefronts to monitor the rearrival on the surface of the Earth of this 6-brane anomaly.’

‘My boy, thank you for this information. It confirms my dearest wish. That means one day we can harness superluminal radiation for instantaneous interstellar communication.’

‘Maybe ships,’ Grace said, her eyes suddenly misty. She might make fun of the plans of the loonies who wanted to chop up the planet to create a Dyson bubble, but at heart she was and always had been a raving science groupie. If she and Hugh could have hitched a ride to Alpha Centauri on the first starship—something that was only just on the NASA drawing board when we left our own time—she’d have gone in a second.

‘Not so,’ Barong said apologetically. ‘Even the supersymmetry adjuncts cannot be employed to allow causality violations. It has been established conclusively that no material body will ever be able to travel faster than—’

‘Enough yacking,’ Zanna said, gathering the plates and taking them to the slightly murky water in the plastic bucket where we soaked them after every meal. ‘Time to kick on. I want to get out on the surface and take a look around.’

‘A suggestion,’ said Barong. ‘Let us send Ferdy out first. He can test the air. Dogs have greater survival skills than humans. Especially humans who are no longer in contact with the Grand One.’

‘No way!’ Zanna cried.

‘Don’t be ridiculous,’ I said simultaneously. ‘Ferdy’s smart, but he’s only an animal. He couldn’t tell us what he found out there, even if we could get him to go out without us. Which we can’t. And shouldn’t.’

‘In fact,’ Barong assured us, ‘Ferdy is a node in what is currently reduced to a dyadic network. He will go if I suggest it to him. He will tell me what he finds. And I will tell you.’

‘What the hell are you blathering about?’ Zanna said. ‘In fact, what the hell are you on?’

‘You forget that both Ferdy and I are threaded by implants,’ Barong said. ‘Being connected to a dog is not remotely the same as being part of the Grand One itself, but we do share a better arrangement than your hopeless mono-mind states.’

‘Ferdy?’ both Suzanna and I cried. ‘You and Ferdy?’

‘Of course. I credit much of my increased cognitive ability to my soul mate, Ferdy. And also,’ Barong said, smiling, ‘surely you will have noticed that Ferdy is starting to show increased powers of deduction. I

think I can claim some small credit.'

'Dear old Ferds?' Suzanna said incredulously. 'Powers of deduction? Listen, buster, Ferdinand's the finest four-footed friend a girl ever had, but he doesn't deduce.'

'Let me call him to us,' Barong said. I shrugged and pursed my lips. 'No, Nat, there is no need to whistle. He will come.'

I let the breath out of my lungs slowly. Ferdinand hurtled round the corner of the main tent and bounded up to Barong. As far as I could tell, Barong hadn't made a sound.

'I'll ask Ferdy the question about St. Ives,' Barong said. 'I'll ask him how many weren't going to St. Ives.'

'Look,' I said gently, 'you might think he can talk to you, but all sorts of, uh, well-meaning people have made that kind of mistake about their pets. Auto-suggestion. You're deluding yourself. Sorry.'

For no reason, Ferdy gave two sharp barks.

'That's two barks,' Barong said.

'I'd say you're right,' Zanna said, poker-faced.

Ferdy let rip with a whole series of very fast yips.

'That's eight barks,' Barong said. During about ten second's silence we all looked at Ferdy, who did nothing at all.

'That's no barks,' Barong said.

'Gosh,' Zanna said, rolling her eyes.

The pup barked once more.

'See,' said Barong. 'Two, eight, zero, one—the number of people and felines and sacks not going to St. Ives. He's bright, Ferdy. He didn't make my mistake.'

'Oh, for God's sake,' said Zanna. 'Maybe you have got some sort of weirdo mind-reading scam going with Ferdy, but the dog didn't do that calculation. You must have done it unconsciously and communicated the answer to him.'

'You still don't understand,' Barong said. 'Both our minds performed the calculation. We both have access to the sum of both our minds. Isn't that so, Ferdy?'

The dog nodded his head like a wise old man.

'Good God,' Zanna said.

'Good dog,' I said.

# Eleven

In the pseudo-night, I woke and heard sobbing. I was out of my sleeping bag and at Suzanna's side in not much more than a moment, but Barong and the pup had been quicker still. He crouched beside her in the eerie blueness, crooning in shared grief and loneliness. Without guile, his hand reached out, touched her hair, her wet face, and Ferdy nuzzled her. She made no attempt to repel them. Emotions surged inside me. I squatted beside the three of them in my underwear, all the hairs on my arms standing up. Zanna

# keened softly.

‘Please don’t cry,’ Barong said brokenly, and I said, ‘What is it, kiddo?’

‘It smashed his eye,’ she mumbled, and she was shaking with grief. With guilt, too, I suppose. Post-traumatic shock, they’d call it; I guess that’s as good a name as any. ‘I fired, and it was in his head.’

‘He would have killed us, Zanna,’ I told her, and reached for her hand. But both her arms were out of the sleeping bag and wrapped around Barong’s muscular waist. Two faces peered from the other lightless tent, withdrew. My sister’s awful groans turned to whimpering, but her tears flowed down her face in the amethyst night. I felt as much part of the scene as a trochee in an anapest. I went back to bed, aching for her pain, half seething with my own jealousy.



I still didn’t approve of sending Ferdy all alone out into the year 5445. It was like using the poor dog as a canary—one of those luckless birds that miners used to take underground. If the canary takes a sniff and falls off its perch, you know there’s dangerous gas around.

‘Ferdy is not a canary,’ I said.

‘This is true,’ said Barong. ‘And a good thing too. Implanting the nervous systems of small birds has always been a problem. The Grand One has many Eagles but no Humming Birds.’

‘Look, I’m getting a bit sick of the Grand One,’ I said. ‘Bird brain or no bird brain, it’s three millennia in the past—really, time to get over it.’

Barong looked pained but said nothing. I added: ‘I’m sure there’s nothing very dangerous outside, even if Hugh can’t pick up anything on his antennae. It just means whoever is out there is using some new method of communicating. Let’s all go out together and see what we can see.’

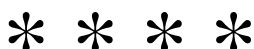
‘Yeah, I’m sick of hanging around in here.’

‘Wait a minute,’ Hugh said. But Zanna had already picked up her cross-bow and was ambling towards the blue wall.

‘Where’s the remote?’ Hugh said, patting his pockets, checking his belt.

‘I’ve got it,’ Zanna called. ‘Come on.’

My sister was already pointing the phase changer at the walls. By the time Hugh reached her she was halfway into the sixth millennium. Without a word, the rest of us followed.



Something was definitely very odd about the year 5445. While we didn’t emerge into our old garage, that was all right—we hadn’t expected the place to survive so very, very long, even with its classy nanotech doors and Neighborhood Watch statuary guardian. The landscape itself, though, as we stood there

gaping, looked nothing like our old neighborhood. Some sort of tropical wetlands, I decided, the kind of place Barong or at least his genes might feel at home in. A lush, grassy bank sloped down to a swamp full of giant water-lilies and reeds bending under their own weight. Huge birds, species I'd never seen before in the zoo or on nature documentaries, stilted through the water, occasionally spearing underwater creatures with their long beaks. In the distance a stand of trees with their roots baldly exposed was home to thousands of parrots who shrieked and fought with each other.

'This can't be where we used to live,' I said. 'Unless it's the Greenhouse effect gone totally feral.'

'Could be,' Zanna said. 'Or maybe they've just rebuilt everything. I like the architecture of that joint.' She gestured toward the trees full of parrots.

I assumed she was being facetious—reading the trees as some sort of purpose-built aviary. But Grace said, 'Oh, darling, it's horrid. It might be a brilliant bit of engineering, but it looks worse than an old 1950s Soviet high-rise condominium. Imagine living in there.'

'What do you mean, high-rise?' Zanna said. 'Two stories is hardly high-rise.'

'Just look at those things,' Hugh said, staring at the clear blue sky. 'Must be dozens of them. They're as big as dolphins.'

The man was obviously hallucinating. There was nothing in the sky at all, not even a cloud.

'I think, sir,' Barong said, 'that you are having a little difficulty with your distance perception. Those avians are quite near to us; they can be no larger than turkeys.'

'Stop calling Hugh "sir",' Zanna said. 'It's driving me nuts.' Suddenly she laughed. 'Regardez le pooch!'

Ferdy had shot wildly away from us, his nose close to the ground. He ran straight for a few seconds, then suddenly veered to the left. With a wild bark he spun round, retracing his steps for a few yards before leaping high into the air and pouncing on something. Whatever it was, it got away. After a baffled second he was back in hot pursuit.

'What's he after?' Zanna said.

'The rabbit, of course,' Barong said. 'Go, Ferdy!'

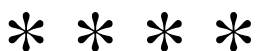
'Rabbit? There's no rabbit,' Zanna told him. 'What would a wild rabbit be doing in a city like this?'

As I watched, Ferdy ran out onto the surface of the swamp. Water splashed up from his bounding paws, but he failed to sink. I could tell the water was at least a couple of feet deep by the way the long-legged wading birds were behaving. Ferdy was running on water. Four of the wading birds flapped slowly into the air, making for quieter waters.

'Can anybody else see Ferdy running on top of the water?' I said.

'What water?' Zanna said. 'You're seeing a mirage, it must be the Sun on the asphalt.'

'You know what?' I said, finally getting it. 'We're all seeing different things.'



And not just seeing different things. Smelling, hearing, touching and tasting different things. Only we

ourselves remained identifiable to the others. Zanna and I shook hands like two explorers meeting at the ends of the earth.

‘Doctor Livingstone, I presume?’

Our hands met and clasped quite naturally. Beyond doubt, we each saw and touched the other person. But—

To me, Zanna shared the same grassy bank where I stood—

—and for Zanna, I was perfectly obviously at her side in some sort of deserted parking lot. I thought of my phenomenology professor. She’d have loved this, and so would the social relativists of the English faculty.

Barong, interestingly enough, insisted that he and Ferdy were having precisely the same experiences.

‘That would be a bit hard to prove,’ Hugh said. ‘How can you know that you and the dog are in the same Umwelt?’

‘The dog and I share a single consciousness.’

‘Barong could see the rabbit,’ Zanna said, sticking up for golden boy.

‘Yeah, but maybe Ferdy was really seeing a cat,’ I said. ‘He never could stand cats.’

‘I’ve never seen a cat,’ Barong said sadly. ‘They were all exterminated during the plague. I’ve seen images, of course.’

Zanna’s expression softened; she put her arm through his, leaning her head on his shoulder. ‘Oh, you poor thing! Well, never mind, our pal Ferdy is better value than any old cat.’

Barong cheered up at once, gave my sister a tentative hug. He still wasn’t very good with body language, but was getting better at showing his emotions. Or maybe I mean feeling emotions. I had a pretty good idea what emotion he was feeling right at this moment, and it made me feel an emotion: it made me feel sick. The sight of my younger sister strolling up and effortlessly plucking the only presentable young man in three millennia for her own was completely infuriating. I stood seething, tongue-tied.

Ferdy bounded in with an imaginary rabbit in his foam-flecked jaws, shaking imaginary water off his coat, and ran straight to Zanna and Barong, that sensitive pair—one a cross-bow toting killing machine, the other a logic machine. Give me strength. The rotten pair of them had even hijacked my good old pup!

‘Come here, Ferdinand,’ I called, not looking at the other two. He glanced my way, hesitated, and then, God help me, seemed to catch Barong’s eye for a quick unspoken conference. A moment later, he turned and padded over to me, panting happily, and gave my outstretched hand a wet slurp.

‘Lovely old puppy,’ I said, still grumpy. ‘You’ll always be my friend, won’t you?’ But I doubted it, and what’s worse I knew that my words were being shared by the strange implant-enhanced mind that seemed to be growing into reality inside the heads of man and dog.

Oh. ‘This is a virtual reality immersion,’ I shouted, attracting the dazed attention of my mother and father from their individual delusions, but not managing to get any noticeable response from the young love-birds.

‘Well, darling, of course.’ Grace smiled fondly at me. ‘The AI has turned the whole world into a

computational platform.’

‘I beg your pardon?’ I was still trying not to look enviously and bitterly at the couple and their dog.

‘All the atoms in the world have probably been rewired to form a global computer,’ she said in great excitement. ‘Like a computronium Dyson sphere, but not as drastic. I hope. On the other hand, even the planet might have gone.’ She grabbed Hugh’s arm. ‘It’s a Chinese Room. The whole planet’s become a Searle Chinese Room!’

‘I don’t think so, Grace,’ Hugh said, with a sly grin. ‘I think an emulation on this scale would require more than one little man stuck inside a box being fed Chinese characters through a slot.’

‘The Grand One outlawed cannibalism,’ Barong said. ‘To eat another is to eat oneself.’

Grace looked at Barong. I looked at him myself. Zanna fell about in fits and managed to put her arm around Barong’s shoulders and give him a squeeze. ‘Characters doesn’t mean people, characters means letters, you know, ideographic writing or whatever it’s called,’ she said.

‘Ideograms,’ I said crossly.

‘But how can he eat ideograms?’ Barong said. ‘Are they on rice paper?’

‘This is getting ridiculous,’ I said. ‘Mom, explain it to him in words that an autistic savant can understand.’

‘See here,’ said my mother the computer programming whiz, ‘the Chinese Room is a philosophical fable, a story, a way of showing that consciousness and behavior are different things. Imagine a man alone in a room and he knows no Chinese—I mean he doesn’t understand the Chinese language, he may have many Chinese friends, of course.’

‘Who is this man?’ Barong said.

‘Oh, he doesn’t exist. A philosopher named Searle made him up.’

‘If he doesn’t exist, he couldn’t have any friends, Chinese or otherwise. Nor would he need to eat.’

‘Listen, Barong,’ Grace said. ‘When you were patched in to the Grand One, you must have considered hypothetical, counterfactual situations.’

‘Oh yes, I, we, thought about them all the time. There was a famous problem about a cat in a box. Even though there weren’t any cats left alive we still used to think about this cat in a box, which was both dead and alive while nobody was observing it, but once you opened the box to observe its state it had to be one or the other.’

‘It’s the same with the man in the Chinese Room,’ I said, rather angrily. ‘Open the door to the room and you find him dead with a knife in his back. But how did the knife get into his back if no one else was in the room?’

‘Natalie, that’s not being very helpful,’ Hugh said. ‘You know perfectly well—’

‘—that the butler did it: he rammed the knife through the slot they used for the ideograms.’

‘If you’re not going to be sensible... Good Lord, look at that.’

An immense Chinese ideogram was shimmering in the sky like an aurora. It must have been twenty miles



away and five miles tall, hanging in the vast sky like a neon sign. It glowed bright red, shimmering.

‘That’s the double happiness ideogram,’ Barong said. ‘The Chinese used it at weddings.’

‘Are we all seeing it?’ I asked.

Everyone agreed they could see the thing, so at least some aspects of our delusions were converging.

Zanna said, ‘I can see it, but it doesn’t look like something that actually exists. I’d say it’s an optical illusion, something that’s being written right into our neural software. It’s not nearly as real as these buildings.’

‘There aren’t any buildings, you idiot,’ I said. I was flabbergasted. Suzanna the social butterfly had been reading neuroscience in her extremely limited spare time? ‘Just a rather nice swamp with birds.’

‘If we can all see the ideogram,’ Grace said, ‘then perhaps we should regard the graphic as more real than any of the alternative landscapes we are being forced to see separately.’

‘Reality isn’t a popularity contest,’ Zanna said. ‘You don’t count votes to find out what exists and what doesn’t exist. That ideogram isn’t there. I wouldn’t suggest trying to climb up it.’

‘Perhaps the different landscapes are the outcome of our minds responding differentially to the computational platform,’ Hugh said, ‘but perhaps the ideogram is the result of our own minds combining in a little sub-set—so we can all see it.’

‘Oh, that’s why it looks so woolly,’ Zanna said, disgusted. ‘It’s the result of woolly thinking.’

Grace told her, ‘Calm down, Suzanna. There’s no call for abuse—this is something we can put to the test. If we’re patching in to a virtuality regime, there should be an input channel as well as an output. In fact, clearly there is—otherwise the system wouldn’t have set up that ideogram graphic as we were discussing Chinese characters.’

‘Okay, we can make stuff happen,’ I said, simplifying rather insultingly, ‘we don’t just have to wait to let stuff happen to us.’ I couldn’t help myself, staring in an accusatory way at Ferdy and Barong. Not that I could blame Barong for getting affectionate toward my sister—it wasn’t as if I’d thrown myself at him. ‘I’m a mistress of semiotics, I can program this fucker just fine. Watch and learn!’

Black and gold swirled in the air between us, and solidified almost instantly. The hair on Ferdinand’s neck rose in a stiff ruff, and he uttered a piercing howl of fright. The tiger of my desire paced back and forth, its big furry pads falling noiselessly on the grass. Its eyes were vast and orange and slitted, its teeth like shiny curved knives, its tongue red and hungry, and its breath stank. I reeled back, terrified by my own manifest thoughts.

Barong jumped back as well, and his hands moved in a gesture like a magician casting a spell. A crack of thunder sounded immediately over our heads, and as all of us looked up involuntarily, including the startled tiger, the shadow of great wings fell on us. The stooping dragon was scores of yards long, as sinuous and scaled as a snake, green and deepest blue, but clawed like a bird. Although it didn’t breathe fire, its roar was terrible and whatever it had been eating had given it even worse halitosis than the tiger’s.

My animal leaped from crouched haunches, out of our circle, and ran for the top of a hill that hadn’t been there a moment earlier. The dragon stooped on it like a hunting hawk, back legs extended, ferocious gaze never budging from its traditional adversary. The tiger reared, slashed at the white underbelly, caught a strip of scales with three sharp talons, ripped. The dragon’s belly opened like a zipper, and its rosy guts started to extrude from the awful wound. It screamed a shrill high whistle of pain. The pointed tail

whipped around, smacked the tiger across the snout.

‘Enough of this, children, for heaven’s sake,’ Hugh yelled, holding up his open hand, and both the heraldic animals vanished. I was sweating with fright and anger. Zanna looked pretty annoyed too. She’d dropped Barong’s arm and gone to comfort Ferdy, who was still whimpering. Obviously the implanted link with his new master and mind-sharer had not prepared the pup for this ordeal.

‘Well,’ Grace said, in a shaky voice, ‘that was a more successful experiment than I’d anticipated. But I think it bears out my analysis.’

‘I cannot interface with the current global system,’ Barong said, distressed. If he was worried about his social gaffe in creating a dangerous virtual dragon, it wasn’t obvious. But something was disturbing the young man.

‘Your enhancements would need to be re-initialized,’ Grace suggested. ‘This thing must be using a completely different and far more powerful operating system than anything available to the Grand One.’

‘I do not doubt that the Grand One—’ Barong started, hotly.

I cut him off. ‘Give it a rest, pal. A lot can happen in three thousand years. Your implants can get outdated. Your best friends can turn on you.’ I heard what I’d blurted out and shut up myself. It hadn’t taken three thousand years for that to happen.

Grace uttered a moan, then. It was a delighted moan, a moan that made me embarrassed to hear it and which distracted me instantly from my own faux pas. I took a quick sideways glimpse. Her face was deeply flushed, raised to the sky, and her breath had quickened. My father was looking somewhat askance at his wife.

‘Grace, are you all—?’

‘Segmentation interlock complete,’ she said, in a voice Madonna would have been proud of in the days when she posed for those photos her kid fans aren’t supposed to be allowed to buy over the counter.

‘Really, darling,’ Hugh said, ‘I think we should be getting on back to the—’

‘Graphase construct/deconstruct ensemble grid,’ she said, and licked her lips. I could not take my eyes away from her now. Her tongue was wet, her mouth swollen, her eyes gleaming with moist light. The flush in her cheeks had reached up to her forehead and down into the open top of her shirt.

Everything froze.

The world vanished. We were standing in the middle of a truly enormous set of mirrored boxes, pigeon holes, filing cabinets. Soft light suffused this infinity of mirrors, gathered in strips at the boundaries of the boxes. Strangely enough, our reflections could not be seen anywhere.

‘Good God,’ I said, ‘we’ve turned into vampires.’

Barong giggled nervously. ‘That is a joke I understand. You cannot see a vampire in a mirror. Very good joke, Natalie.’

‘You don’t explain jokes,’ Zanna said snidely. ‘You laugh at them, or groan, or just ignore them if they’re as bad as that one.’

‘Girls, for heaven’s sake,’ Hugh said crossly, ‘this is hardly the time or place for your dismal rivalries.’

Grace,' he said to Mom, touching her hot cheek, 'I think you should decouple from the system. You're worrying us.'

'It's glorious,' she said, panting.

'I'm sure it is,' he told her, 'but I'd rather we discussed it back inside the vacuole.' He took her by the arm and started to frog-march her in what looked to me like a random mirror-bright direction. 'Wherever that is,' he muttered.

'Jurassic Park,' Grace crooned, 'why not, let's give it a spin.'

Hot steamy air crushed us, and immense primitive plants, and brilliant blue sky, and sharp clean odors, and an extended family of small long-tailed beaky saurians running from one clump of vegetation to another. A Tyrannosaurus Rex did its patented terrible roar, shaking its car-sized head. A velociraptor peered at us and showed its teeth, which were far more scary than the teeth of either the tiger or the dragon, but maybe that was because I'd seen the Spielberg movies set in this fantasy-land and knew what the horrid animals would do to frail soft-bodied mehums if they caught us and liked our taste.

'Mom, stop it,' Zanna shouted, and slapped her hard across the face.

The ancient prehistoric landscape was gone. We were standing next to our old family home, the way it had been before some rogue Spiking AI put a living sculpture of the Heroine Zanna of the Cross-bow in its place. Grace stared at her younger daughter in astonishment, rubbing her cheek.

'Oh dear,' she said. Her eyes rolled up in her head. 'It's very, very nice.'

'Grace, for the love of God,' Hugh cried, pulling her toward the open doors of the garage. I ran ahead, dragging the old worm-eaten wooden doors wider. The great dark lumpy sheet of lava was there. Ferdy ran up to it and pressed one paw against the surface. It didn't budge.

'It wants to upload me,' said my mother.

She lay naked, then, helpless, in long grass. We shouted to her across the rushing of turbulent river foam. The white bird fell from the sky, struck her a sudden blow. The swan's great wings still beat as she staggered. Grace fought the rape with all her will; we pressed against the thickened air to her aid, but it would not let us enter there. The beast moved upon her, an immense pale young bull now; she cried in rapture and agony. Fire burned in a pillar of glory, crushing her in white roiling clouds of incense. Golden flecks bright as the sun tumbled from heaven, wove about her, swept my mother up, tore her as the wings beat and beat like the pulse of a heart.

'Mom!' shrieked Suzanna.

Barong clawed at the heavy air, eyes white rimmed. 'It is the Grand One,' he cried, 'it comes for us, oh, take me, take me instead.' Ferdy bayed, an impossible bell-like tone from his doggy throat.

'Shut the fuck up,' I screamed at them both. 'It's hurting her!'

Hugh howled with fury and grief, trapped, held tight, watching the unspeakable. 'None of this is happening,' he yelled. 'Grace, fight it! This is not real! Fight it! Fight the goddamned filthy thing!'

'I won't leave you,' she whimpered. I couldn't tell if she was speaking to us, or to the god thing that brutalized her, that ravished her senses, that ate her soul.

I screamed her name once again.

In a drowsy, amazed whisper, she murmured, 'Being so caught up, so mastered by the brute blood of the air, I put on its knowledge with its power.'

Indifferent, then, done, the thing dropped her. She died.

## Twelve

We could not bear to leave Mom's body in the multiple landscapes of 5445. Weeping, we carried her into the vacuole and laid her on a foam rubber mattress. After some hours—or it might have been days, so far as I could tell in my grief—Hugh activated the time change and brought her with us through the green flash.

A cool, drizzly wind was blowing in the year 52,435 when Zanna, Barong, Hugh and I took it in turns with our single clumsy shovel, half-melted as its edge had been by nano attack, to dig a place in the rich loam where we might bury Grace.

All of us were still weeping, even Barong. I had to stop after a while and go to my father and put my arms about him, soaking the shoulder of his heavy, rain-damp shirt with my own tears. He cried without shame, deep wrenching sobs of grief. He and Mom had been a team, a unit, almost a single person—as bonded in their special way as Barong and his implanted other-mind Ferdy. Poor Ferdinand was as upset

as the rest of us, for he had loved my dear mother with considerable doggy devotion, and his newly enhanced understanding was devastated by her loss. He howled and howled until we asked Barong to intercede for us, beg Ferdinand to contain his raw, sweet sorrow. It was too sad already. The lost-soul agony of a bereft dog was more than we could bear in our forlorn misery.

When the grave was deep enough in the alien ground of this remote future, we stood around it with our hands clasped and our eyes red with weeping. Hugh had brought out the stereo unit and set it to play a Mozart Requiem. None of us was religious in any traditional sense—even Barong, who'd been bonded to a living god, had been torn from his living faith—but we knew that grieving called for the richest expression of art that the human race had attained in its long journey. Aching voices and perfect instruments recorded fifty millennia earlier rang across the virgin, deserted landscape, and Hugh spoke for us the old, old words of loss, departure, and the hope of reconciliation with inevitable fate.

'We know that the whole creation groaneth, and travaileth in pain together,' Hugh said in a breaking voice, head bent.

'Take thy plague away from me,' he went on, quoting the Book of Common Prayer, a venerable volume his own parents had brought with them from England. He wasn't reading from the book; devout atheist though he was, he actually knew these words by heart. Frankly I disagreed with their implied embrace of misery and I felt sure that Mom would have done so as well. But I stood and wept and tried to understand what my father found meaningful in such ancient lamentations.

'I am consumed by means of thy heavy hand. When thou with rebukes dost chasten man for sin, thou makest beauty to consume away, like as it were a moth fretting a garment.'

Somewhere within the lovely old words and phrases perhaps there was comfort to be had, and I sought it and clung to it when I found it. The image of a moth fretting a garment was so apt, really, that I let it play in my mind. Mom's beauty would lie in this strange grave and decay like a garment eaten by moths; as the molecules of the garment would become in time the molecules of the moth and her offspring, so would Grace's body continue on for ever, playing its part in the life of the planet from which she came and to which she was returning.

'The last enemy that shall be destroyed is death. For he has put all things under his feet,' Hugh said.

'Perhaps the last enemy has been destroyed,' Barong said. 'Perhaps Grace is not dead. When she said she was being uploaded, I feel that this is exactly what happened. Even now, more than fifty thousand years later, I sense her presence.'

'Maybe,' Hugh sighed. 'Maybe.' Despite those evocative words he knew by heart, it was obvious that he placed no trust in any hope of resurrection from the dead, any life everlasting. Grace was gone, taken from us, and that was enough to cope with.

Under the gray sky we built a pile of stones over the shallow grave and brought some food out from the vacuole. The drizzle had ceased, although the wind remained cool. I tried to make a fire to warm us, but all the fallen branches were damp and I couldn't get it started.

In a small voice, at last, Zanna asked our father, 'What was all that? What happened?'

Hugh's face was wretched. He turned away for a moment, then held out his arms to both of us. We huddled together in silence.

'I think she was trying to speak to us, tell us what was happening,' I offered, finally.

‘What? What?’ Zanna shrieked. ‘She was being— There were animals doing... Oh shit, I can’t believe what I saw.’

‘Yeats,’ Hugh said. ‘It was a poem by William Butler Yeats, "Leda and the Swan". We’d both loved it when we were young. There were nights we spent reading Yeats to each other and drinking wine and—’

I hugged him fiercely until his tears ebbed, and his shaking subsided.

‘Mythology,’ I suggested, surprising myself as the half-forgotten images burst up into memory from course work I’d drowsed through and forgotten. ‘The gods took humans for their pleasure. Jupiter, wasn’t it? The boss god. He seduced mortals as his pastime.’ My words tasted bitter in my mouth, thinking of those awful last moments. ‘He, he fucked Leda in the form of a swan, and Europa, disguised as a bull, and, and—’ I couldn’t remember the name of the other one. ‘Some poor bitch as a shower of golden coins, for God’s sake.’

‘Danaë,’ said Barong, unexpectedly. He was standing alone, miserable, with only Ferdinand for company. ‘But that is not the mythology of my people. I did not see any birds or bulls or coins. I watched her tormented by the ten-headed demon Ravana, before Rama came for her with his monkeys.’ He paused, looking miserable. ‘I cannot believe the Grand One would do this thing. But perhaps now she is within that large embrace, safe from mortal decay and woes.’

I wanted to slap his face. She was dead! She was gone, stolen from us. I huddled against my family again, and let the tears pour down my cheeks.

We sat finally on the drying ground in the lee of Mom’s cairn and looked over the landscape in front of us. Nothing odd was happening. This time we all saw the same things, heard the same small sounds. No signs of human habitation were evident, or at least nothing recent. Some of the overgrown mounds and creeper-covered outcrops might have been the remains of civilization. Everything looked fertile in a slightly gloomy, misty sort of way. The soil we had dug for the grave had been rich, good for planting things in.

‘Let’s stay here,’ I said. ‘Let’s stay with Mom. We can start a farm. There must be edible plants around. We can gather the seeds and plant them.’

‘But would the locals be friendly?’ Zanna turned to Barong at her side, nudging him with her shoulder. ‘What do you say?’ she said. ‘You’re good at picking up the vibrations. Any other humans around here?’

Barong didn’t answer immediately; he seemed to draw within himself. We waited in silence, shivering slightly in the cool breeze. ‘There is a presence,’ he said. ‘Maybe it is the Grand One but if so it is very greatly changed. I think it contains Grace. But I don’t think there are any humans in the vicinity. Maybe there are no humans left on the entire planet.’

‘Well, that’s damned spooky,’ Zanna said. ‘Where could they have gone?’

‘Underground,’ Barong said.

I said, ‘Hiding from the AIs?’ That seemed improbable. Despite the bad sci fi movies, there certainly wasn’t any way that simple humans could conceal their presence from such intelligences, let alone hope to confront or defeat them.

‘I don’t know,’ Barong said. ‘I just sense that they are underground.’

‘In caves?’ I suggested ‘Maybe they’ve regressed to the Paleolithic.’

‘Maybe they are not even alive,’ he admitted. ‘But I don’t think they are dead.’

Usually I’d have greeted that sort of logical buffoonery with derision, but in this moment of grief we were all vulnerable and protective of each other.

‘I’ll have to try to get closer to the Grand One. Or whoever is now the spirit of this planet.’ Barong sank in his elegant, limber way into the cross-legged pose the Zen meditators call ‘sitting zazen’. I thought it looked excruciatingly uncomfortable—ankles up over your thighs, back straight, breathing approximately twice every minute... Bunch of poseurs, I’d thought then, and Suzanna had agreed with me, but I could see from her admiring glance at the wonder boy that she’d updated her opinion. Well, he did look rather special, I must admit, sitting with his eyes closed, taking in the heavy damp air through one nostril and blowing it out the other.

Ferdy perched himself down facing Barong, and got as close to a zazen position as a dog can manage. Under other circumstances I might have laughed, but Mom’s body lay in a grave a couple of yards away, covered with stones, scarcely cold although in literal-minded terms she had died tens of thousands of years earlier. Time leaps are hard to come to terms with emotionally.

‘Oh, she notices me,’ Barong said in a sleepy voice.

‘Mom?’ I squealed.

‘Gaia,’ he murmured. ‘The mind and machinery of this old planet.’

‘Find the people,’ Zanna breathed in his ear. ‘See if there are any... any mehums left on Earth.’

Ferdy raised his head, eyes closed, gave a mournful wail.

‘All dead,’ Barong muttered. A tear ran slowly down his smooth golden cheek.

‘They can’t be,’ I yelled. ‘You said they weren’t dead. How can we survive if everyone else is dead, if the whole human race is—’

A terrible notion burst into my overwrought imagination. It was Adam and Eve all over again, except that there were two Eves and only one Adam. Obviously you couldn’t include Hugh. So it would be a frightful contest between me and Zanna for the last surviving mate on the entire planet. I didn’t have to wonder very long about which one of us was likely to win herself a husband. I found myself sobbing. This was the kind of moment when I might have turned to my mother for advice and comfort. But Grace was gone, gone.

I wrapped my arms around myself, that empty lost place, and imagined a future in which I had nobody at all. Well, we could share Barong, if it came to that. A shocking sin, the Book of Common Prayer would surely insist, most unnatural. On the other hand, the Bible was full of stories about patriarchs with dozens of wives and concubines. As we’d noted in my feminist theory seminars, you didn’t hear much about setting up house the other way around, ten men slaving away for one haughty wife. Still. Polygamy was how we’d have to arrange our lives, and put up with the emotional turmoil. People had done it in the past, when humankind was young. Maybe we’d be forced to just put up with each other, and share our husband. I found myself unable to take the further step into incestuous fantasy: Lot’s daughters.

‘They sleep,’ Barong said, after a long meditative pause.

‘They can’t all be asleep at once, son,’ Hugh said. He’d been watching this mystical search with bruised, sad eyes. ‘Unless they live on the other side of the world where it’s night. Even then, surely some of them would be on duty, keeping emergency watch, that sort of thing.’

‘Different kind of sleep,’ Barong muttered, at the edge of sleep himself. ‘Wait. I descend the search tree.’ Ferdy uttered a single harsh yip. ‘Yes,’ Barong said. ‘It is as Hugh told us: The last enemy that shall be destroyed is death. For he has put all things under his feet.’

He shot to his own feet, instantly wide awake.

‘They are in suspension,’ he said in great excitement.

Hugh got it immediately. ‘Cryonic suspension?’ he asked keenly.

‘Originally,’ Barong told him. ‘In the late 20th century, and during the early part of the Great Plague, some humans were frozen or vitrified after nominal death and placed in liquid nitrogen, to protect their flesh from further decay.’

‘Crackpot cult stuff,’ Zanna said in frustration. ‘You can’t unfreeze a dead person, Bar. Even if you could, they’d still be dead. Horsemeat. Worse than horsemeat—you can’t turn a hamburger back into a cow. You can’t put an omelet back into its shell and get a chicken.’

‘Stow it, Zanna,’ Hugh told her. ‘You’re just spouting prejudice.’ I don’t think he’d used that name for her before our mother’s death. He was leaning forward, face racked by a new and terrible anguish. ‘Barong, are you telling us that this revival technology has been available since the 21st century?’

‘No, just the freezing part,’ the young man said, puzzled by Hugh’s intensity. Ferdy scratched at the soil, and Barong’s gaze clouded. He bowed his head. ‘Oh, I see. Yes, Hugh, the cryostasis technology had been perfected at the time of Grace’s departure. But you don’t underst—’

Hugh uttered an awful, soul-trembling cry, and slapped the sides of his head with his open palms. The sound made my heart clench.

‘We could have saved her! If we’d tried harder to access the AIs, they might have placed her body in cryonic—’

Barong moved very fast and very gracefully. He stood directly in front of Hugh and grabbed his forearms, put his own face right up against the screwed-up, teeth-bared face of my father.

‘Hugh, I have come to believe she was in the embrace of the spirit of the world at the very moment when she left us. It knew her, and knew us, and acted as it did with her full agreement. We have buried nothing but her discarded chrysalis.’

Hugh flung off his hands, but he had regained control of himself. He panted a little.

‘Son, I do not share your metaphysical consolation,’ he said in a low voice. ‘Besides, why would any humans still remain in suspension if their... their souls... their state description could be uploaded into an AI?’

‘I do not consider that a very good way to understand what has happened,’ Barong said apologetically. ‘But the system has given us a unique opportunity.’

‘To have ourselves suspended as well? Too late, damn it, too late.’

‘On the contrary,’ Barong said. ‘Gaia asks if we would care to authorize revival of those humans held in the extant suspension facilities.’

It took a moment for us to sort out what he was implying. Once we did, there was no doubt what our



decision would be.

‘Let me get this straight,’ Zanna said. ‘They defrosted the corpses more than fifty thousand years ago, and repaired the damage—but kept them asleep anyway?’

‘Not asleep,’ Barong said, frowning. ‘There is no word in English, or Bahasa Indonesia for that matter. Their animation is indefinitely delayed.’

‘Why the hell would the damned AI thing do that?’ I asked angrily. ‘Doesn’t want any competition, eh? Wants to retain the whole planet for itself?’

‘It is the whole planet, darling,’ Hugh said. ‘I imagine it’s a matter of moral sensitivity. The people who went into cryonic suspension might have stipulated that they only wished to be awakened when the world was ready for their emergence. Perhaps they feared that an overpopulated, polluted future would resent their presence.’

‘I believe you are correct, Hugh,’ Barong said. I suddenly noticed that he had been calling my father by his given name for some time now; the young man was growing more sure of himself, declaring his identity as an individual, on an equal footing with the rest of us. ‘At any rate, the Gaia mind seems to have been waiting for us to make the choice.’

‘Well, it’s obvious, isn’t it,’ I burst out. ‘Wake them up! Get the human race back on track! We can’t start the Garden of Eden all over again with just the three of us—’ And I broke off, blushing.

Zanna, with unusual delicacy, saw instantly what I meant and, instead of making a hurtful joke out of it, stepped away from Barong, gathering up the dishes and bowls from our funereal meal. If Barong or Hugh noticed anything they kept it to themselves.

‘Yeah,’ she said, face turned down into the pile of crockery, ‘of course they have to come back.’

‘Quite so,’ Hugh said.

Ferdinand barked once.

‘Very well,’ Barong said, with a beatific smile. He closed his eyes again, and a hundred yards away to the north, on the other side of our vacuole from Mom’s grave, the ground tore itself open and something huge and white and weirdly fleshy burst up into the air, scattering dirt and small stones everywhere.

I screamed. Some sort of pale, creepy Bram Stoker monster was rising from the lower depths to punish us for our impertinence. This is what comes of studying the classics.

‘Our vehicle,’ Barong said, touching me lightly on the shoulder. ‘Don’t be alarmed.’

‘Good God,’ Zanna yelped, ‘what is it?’ Then she doubled up in laughter. ‘It’s a mushroom, that’s what it is! It’s a toadstool! Where’s the caterpillar? It should be sitting on top smoking a hookah.’

Alice in Wonderland. Yes. Or was it Through the Looking Glass? The cap of the mushroom was heavy and gray, with bright red spots scattered on it.

Barong said: ‘It is a simple saprophytic agaricaceous fungus. Rather larger than usual, it’s true.’

‘That’s what I said,’ Zanna crowed, still sniggering at the big stupid thing as we walked toward its thick dirt-crusting stalk. ‘A mushroom! What are we supposed to do, fly away on it? Takes bites, and get magical levitation powers?’

‘Not quite,’ Hugh said, wonderingly, tapping on its woody stalk. ‘There’s a door built in to it. This thing is genetically engineered.’

The door slid open, downward into the ground, revealing a kind of elevator made of firm pulp.

‘Is this thing safe?’ I said. Pulp fiction, a small silly part of my mind was gibbering. ‘I don’t think I want to climb into a toadstool. It might be poisonous.’

Ferdy bounded past me, through the doorway, and sat down in one corner with his grinning mouth open and his red tongue sticking out.

‘Oh, all right,’ I said, and followed him in. The moment the last of us was inside, the pale door slid up noiselessly, and the bottom fell out of my stomach.

‘Down, down, down,’ Hugh said, after a ghastly moment, with a return to his old humor. ‘Would the fall never come to an end?’

I moved across the cabin to comfort Ferdy, who looked unhappy, and the confused muscles in my feet and legs informed me that I was several inches above the elevator floor. No wonder I felt so queasy. My weight seemed to have been halved.

‘Do cats eat bats?’ I said back. ‘Do cats eat bats?’

Zanna added, smiling, ‘Do bats eat cats?’

Barong stared at us as if we’d gone mad.

‘Always these questions about strange, improbable dietary practices,’ he said. ‘Why do you discuss these animals?’

‘It’s a lovely children’s book,’ I told him. ‘Lost forever, probably. We should try to write down as much as possible so people in the future don’t have to go without.’ I pushed up with my toes, rising and falling much more slowly than usual. Zanna saw what I was doing and kicked up, had time to bring her knees to her belly before she thumped down. Poor Ferdy started to look sick, flailing about with all four legs, until Barong caught him and held him still.

‘This must be a ballistic tube,’ Hugh said to Barong. ‘cutting a chord through the crust of the earth. Or perhaps a brachistochrone, a cycloid curve... that would be swifter. Either way, a gravity train.’

‘I have accessed a map,’ the boy said. A solid, realistic globe of the Earth was suddenly spinning slowly in the middle of the cabin. A vivid blue dot burned near our home and then, incredibly, as it turned into view, another on the southeast coast of Australia.

‘Surely that can’t mean what it—’

‘I believe so.’ Barong extended his hand; the sphere grew transparent, revealing the innards of the planet, from its thin crust and deep mantle to a seething inner core of fluid iron reaching fully halfway to the surface. I gasped. A perfectly straight neon blue line punched across the bowels of the planet, offset from the center by maybe a third of the radius, from about 34 degrees north to the equivalent southern longitude. And a blinking crimson bead was transiting that impossible tunnel.

‘Is that us?’ I bleated, terrified but exhilarated.

‘Yes. We are falling along a magnetic levitation rail in an evacuated tunnel, under the influence, as you

say, of gravity. Fortunately we shall bypass the rigid iron core. Our living vehicle should attain perhaps eight km per second at the mid point.'

I was filled with dread and joy. Better than flying into space in a Shuttle, one of Grace's dreams. Since we and our toadstool were plunging along an airless tube, I understood, our weight was drastically reduced. At the far end, on the other side of the world where the tube rose to meet and rejoin the surface, gravity's tug would slow us down naturally without any extra braking forces. None of the painful pressures you'd experience in a rocket.

'Oh, great. And how long will we be stuck in here?' Zanna asked, in an irritating Are we there yet? tone.

Hugh's lips moved as he calculated. 'Since it's a chord, penetrating the planet in a straight line, about another 40 minutes.'

'How can you possibly know that?' I asked in disbelief. 'Look how far away it is! We could be locked in here for days.'

'Not so, Natalie,' Barong said mildly. 'Your parent is correct. Our trip must take just half the time required of a very low orbit of the world, although we are deep below the planet's surface. All such trips take a little over 42 minutes to complete, even from one side of the earth to the other.'

'So what's happened to our weight? This is better than dieting.' Zanna gave me a rather mean glance as she said it.

'Suzanna, if the tunnel passed directly through the molten core of the Earth, we would be in free fall and feel altogether weightless. As it is, I calculate that our deepest point will be—'

'You can't be serious.' I was incredulous. 'Through the middle of the damned earth? Don't be ridiculous. We'd be burned to death, I saw a Discovery program that said the middle of the Earth is made of boiling iron at some grotesque temperature.'

'I would be forced to agree with you, Natalie,' Barong said, looking cautiously from my father to me. 'Below our trajectory is the true core, solid iron under a pressure of three or four million atmospheres, hotter than the Sun's surface. However it appears that this vehicle is coupled to the maglev system I mentioned, which in turn is suspended inside a tube of stabilized exotic matter. Such materials will readily insulate us from tectonic pressures and heat.'

'Good heavens,' Hugh said. It took a lot to impress my father. 'That's a remarkable level of control. Another 6-brane?'

'A 5-brane in this case, I believe. The requisite odd dimensionality, you understand.'

'Oh. Foolish of me.' They babbled away to each other in Incomprehensible Geek.

After a time, I felt heavier again. 'Nearly there.'

'No,' Barong said, and flicked the map into existence again. The red spot was only now passing the central core. 'Because the heart of the world is so dense, it pulls at us more fiercely as we approach it.'

'Oh my God,' I screeched. 'We'll be crushed to death!'

'Calm down, you goose,' Hugh said. 'Gravity will not exceed, hmmm...'

'Point eight gees,' Barong said helpfully.

Sulking, Zanna looked for diversion and found nothing except Barong himself. ‘Another twenty minutes of this, it’s ridiculous. There’s not even a TV set. And I’m starving.’

‘We’ve just eaten,’ I reminded her. ‘What we need is a pack of cards.’

‘Refreshments must be available, of course,’ Barong said. ‘This vehicle is plainly held in readiness for mehums. Let me see if I can access the system.’ He went blissful, and a portion of the wall grew transparent. On four beautiful ceramic plates, sliced fruit gleamed in many colors: tiny seedless strawberries vividly red, pale green melon and bright orange segments, bananas and mango, miniature tomatoes glistening with dew, and a curious fruit I didn’t recognize: each half of its split husk contained a creamy custard in five oval sections. Barong cried in delight, ‘Ah, durian!’ and reached for a plate. The window opened like clear ice melting instantly into the air; at the same moment, Hugh cried out in horror and pulled back Barong’s hand. Too late: a stunning, fecal odor rushed into the cabin, making us gag. Ferdinand looked about, growling but interested.

‘Shit!’ The sewage stench caught in my throat. ‘That’s disgusting.’

‘Refrigeration must have broken down,’ Zanna said, practical in a crisis, although her face was screwed up. Barong looked back and forth in astonishment and dismay.

‘This is a sweet delicacy,’ he told us. ‘Perhaps durian fruit is an acquired taste. Be assured that its flavor in no way resembles the scent, which evolved to attract the attentions of insects that feast on ordure. Here, allow me to assist.’ His face went blank again, and with a faint rushing a sort of fresh air conditioned wind blew about the cabin, venting the awful stink. It lingered, even so, like something you’d hoped you had scraped off the bottom of your shoe.

‘I remember now,’ Hugh said. ‘An Indonesian fruit, and as you say a specialized taste. Presumably the machine knows your preferences, Barong. That’s remarkable, given that we have been absent from the world for millennia. Were all the survivors from your islands? Did everyone else perish in the plague?’

Barong shook his head. My sister was bobbing up and down with a languid underwater air, casting regretful glances at the unattainable fruit. ‘My parents were flown to America from Manila by pandemic specialists from the Centers for Disease Control in Atlanta, and then taken to San Jose to the computation center.’ Parents? I thought, after a momentary lag. Great-grandparents, maybe. But then perhaps people had lost touch with the reality of generations, under the tutelage of the damned Grand One thing. ‘Billions were dead by then,’ he was saying. ‘The virus had mutated very quickly, almost as if it were designed to do so.’

‘Perhaps it was,’ Hugh said, and his mouth tightened.

‘The Grand One has analyzed all the epidemiological data, and concludes with high probability that the plague was either a military grade prion or a natural variant elicited by intolerable overpopulation and unspeakable conditions among the mehums in Manila.’

Zanna, I saw, had her eyes shut, frowning. I guessed she was trying to command the gravity train’s automatic services. Nothing happened, of course. She lacked Barong’s on-board interface gadgetry.

‘Give it a rest, Zanna,’ I said. ‘You’ll never—’

Loud clacking music burst from hidden speakers: tootling, piping wailings. After a shocked moment, the volume dropped, although not enough.

‘That’s hideous,’ I said, offended. Simultaneously, Zanna grinned and said, ‘Hey, cool.’ Barong looked

happy; I guess it was the old school theme song or something.

Hugh ignored all this as beneath his dignity. 'What were your Indonesian ancestors doing in Manila, if I may be personal, Barong?'

'My mother and father were physicians with the group Medicine without Borders. They met while ministering to the wretched creatures abandoned in a vast Quezon City garbage dump site called Lupang Pangako. That means "the Promised Land", a rather bitter name, don't you think?'

'Indeed. This was some sort of shanty town, I take it?'

'Nearly half the population of Manila lived in such conditions,' Barong said, 'or so I was told. The mountain of trash and dead animals burned all summer long, and they scratched out their living fossicking in the putrid smoldering waste amid methane flames and stench. When the rains came, the tons of garbage would flood and subside in terrible landslides. Illness was everywhere, and misery. This is what the world of mehums had come to, before the Grand One made new the world.'

'Well, that's a rather biased and one-sided view,' I said, uncomfortable. 'Silicon Valley was nothing like that.'

'It was headed that way by the time you came back for me,' Zanna said, bobbing and bopping, eyes closed, bitterness at the edge of her words.

'That was the plague, though,' I said. 'You can't expect—'

'The world the mehums made was a plague of a different kind,' Barong said. 'I am very sorry that Grace has gone now to join those many billions who perished in the great dying, but we see from this vehicle that mind itself has not departed the earth. Let us place ourselves within the governance of its wisdom.'

I watched Zanna's lips draw back in a sarcastic snarl, but she kept her opinion to herself. Let's not upset the golden god, eh?

Hugh was saying, 'Barong, how could your parents have been alive in our time? That was two centuries before we—'

'Kidnapped me.'

'—found you. Your presence inside the vacuole was an accident, you must know that. Besides, if your Grand One had not been so intent on terrifying us with pointless displays of—'

'I am one hundred and sixty eight years old,' Barong said, regaining his equanimity. 'My parents are dead, alas. Even the Grand One could not reverse the damage of age and poor structural design in their fallible bodies, although it did extend their lives for many more years than they had anticipated.' None of us said anything; I reached out one hand and patted Ferdy's head, shaking my own. 'Father died at the age of 117, while Mother remained in my company until she was 126. They were very frail by then, of course.'

Zanna gazed at him, thunderstruck. 'Of course,' she said. 'They would be frail. After all, they were half a century younger than you are now, you poor old decrepit guy.'

He did not detect her irony, I think, or else met it in kind with the driest possible poker face. 'I am not perfect, Zanna. Although my chromosomal telomeres have been reset and the repair and maintenance enzymes in my cells optimized, damage accumulates. I very much doubt that I will live so long as five thousand years. And now that I have lost intimate contact with the Grand One—' Tears formed in his

lovely, manly eyes, spilled over and ran down his golden cheeks. No, there had been nothing sardonic in his answer. This was the reality of his world. And now of ours.

Ferdy barked loudly. I'd been feeling lighter again for a while.

'Oops, what was that?'

Although I couldn't see anything different, my seat suddenly pressed more firmly upward, like a very classy elevator sliding to a halt after dropping a hundred or so floors—except that in this case it had traveled thousands of miles. I checked my watch: just on 42 minutes after we'd started. I was impressed by the accuracy of Hugh's field calculation.

With scarcely a bump, the toadstool door slid open—sideways this time—and we tottered out into a gigantic dim room filled with... well, with cloudy Easter eggs. They hung in the air without visible racks, each one a different colored pattern, each the size of a small car. Hundreds of them, maybe thousands. The room went on and on. As we entered, a soothing piping music came up, like nothing I'd ever heard but somehow wonderfully calming and lovely.

'I thought they'd be stored upside down in Dewar flasks,' Hugh said, 'at minus 196 degrees Celsius.'

'I thought they'd be standing up in big test-tubes of ice like you see in all the sci fi flicks,' Zanna said.

We walked into the cavernous place, careful not to touch anything.

'These suspension cells are not refrigerated,' Barong said. 'That was a very primitive, early technique.'

'You're saying they could just jump out and go about their business?' I blurted. 'Well, wake the poor things up!'

'That is our privilege,' he said. 'Of course, they will be extremely disoriented at first. We must be patient with them.'

'So what do we do,' Zanna said with her usual sarcasm, 'yell "Abracadabra"?'

A golden pillar of glowing light rose out the tiled floor. Something wonderfully graceful stood within it, regarding us. Tears rushed to my eyes.

It was not Grace returned from death. It was nothing like my mother. Yet I responded to it as if I were its child, and always had been.

'Welcome, old ones,' it said to us, in a tongue that was not English but which I grasped instantly and fluently. I suppose it was reaching directly into my brain and manipulating the neural webs that control grammar and syntax. At any rate, I and the rest of us had absolutely no trouble understanding its speech. Her speech? His speech? The being in the golden column was beyond gender, beyond sex. We were bathed in an overwhelming presence of love and power and good humor. 'Welcome, children from the dawn ages.'

'Greetings,' Hugh said, with something of a stammer. 'Thank you for showing us this kindness.'

'These sleeping ones have waited for your judgement,' the being told us. Something of the great long waiting flooded our minds, its solemnity and its awesome consequences, a gift from the Gaia being that stood before us, bypassing any need to explain and discuss and misunderstand. We knew instantly what was required of us, and what was at stake. And what it would cost us.

‘No!’ my father cried. ‘Must I leave her?’

‘You cannot stay in this time once they are awoken,’ the being told us, sharing our sorrow but implacable in its own necessity. It knew and understood so much more than we did. The logic was like pure fire in our minds and hearts. We could not disagree with its conclusions. And yet it left us a choice.

‘So if we wake the dead,’ Zanna said, choking a little, ‘we must go forward another leap. We are not permitted to join them.’

‘It’s not fair,’ I said, starting to cry. ‘That’s the whole point of waking them up! We need their company, we need them to repopulate the earth.’

‘We know too much of what has happened,’ Barong said, and Ferdy growled his deep agreement. ‘Our knowledge would warp their development.’

‘Scrub it out of our minds,’ I said. ‘Let us stay!’

‘No,’ Hugh said fiercely. ‘Nat, you don’t know what you’re saying. Do you wish to forget your mother? We are being denied the consolation of visiting at her graveside during the rest of our years—would you also obliterate her very memory?’

‘Of course not,’ I sobbed. I ran to him and threw my arms around him. ‘Oh, it’s so unfair!’

‘Have you chosen?’ asked the golden presence.

We looked at each other, conferring. Really there was only one bitter choice for us.

‘Yes,’ Hugh told Gaia. ‘Wake them. And then return us to the—’

Green fire enveloped us. My head felt the familiar blow of time leap.

I looked about me, stunned and confused. The others were just as unsettled, staring wildly at the furry blue weirdness of the spacetime constriction.

We had been returned through the bowels of the Earth to the vacuole, and the time jump had been triggered by Gaia. We’d now gone 14.668 times as far into the future as our previous jump had borne us when we’d stood in the room of Easter eggs and its dormant humans, the inheritors of an earth from which we were now exiled.

‘What year is this,’ I asked Hugh. ‘Oh god, what year has it sent us to?’

He was punching keys on his calculator.

‘If everything has operated according to the previous pattern,’ he told us gravely, ‘we are now in the seventh century of the 742nd millennium.’

# Thirteen

## Glaciers covered much of the

# world in the winter of the year 741,717—and winter lasted all year round.

Hugh learned this much within hours of our rude discovery that we'd been returned unconscious to the vacuole and bumped another Pi-by-Feigenbaum multiple into the future. He extruded several instruments through a phase-shifted pucker in the spacetime anomaly, not daring to let any of us emerge in person, and immediately picked up a bunch of digital transmissions from low earth orbit.

It was quickly obvious that they were automated signals, and it took a surprisingly short time to run them out as images on the visual display unit. The script they were written in was nothing we'd ever seen, but the detailed maps and real-time video scans of the planet, viewed from space-borne meteorological platforms (plain old satellites, to non-technofreak me), were perfectly clear. The world had gone back to the ice ages.

And, apparently just for the fun of it, the magnetic poles had flipped. What had been north was now south, and vice versa. Our compass needles pointed in exactly the wrong direction.

The air was very dry, and there was no snow or ice at our latitude. We emerged from the lava-face of the vacuole and found signs of humanity almost at once. But when we crossed the open stretch of grass to the place where we'd buried Grace and piled her grave with a cairn of stones, no slightest trace remained. I was torn. A dozen, a hundred sublime poems of death and loss rushed through me like ghosts—Milton, Dylan Thomas, Sylvia Plath—bringing scant comfort. I had read and studied them, anatomized their structure and social context, but understood nothing at all. This was a knife, and a pressure inside my breast that seemed ready to fell me.

'It's not surprising that we find no trace,' Hugh said, his voice heavy with grief but with a determined edge. 'Nearly as much time passed while we were locked inside the vacuole as the whole prehistoric gulf from earliest human days to our own home era.' He glanced around at the smooth walking paths cutting through the long grass in the distance to north and east. 'Heaven knows what the revived cryonics humans have evolved into by now. They might be as far beyond us as we are from the hominids.'

'Get real,' Zanna said rudely. Her own anguish had found a more brutal outlet. 'Would the super-evolved supermen of the future still be using weather satellites?'

'Every kind of intelligence will retain a need for information on weather conditions, sweetheart,' Hugh told her, a little crisply. 'But I take your point. It is certainly surprising that my little desktop computer and rudimentary antennae were able to detect and unpack their communication protocols.'

'Not to mention decoding them.'

'Well, their revived ancestors were from the 20th and 21st centuries, after all,' I said. 'Most of them spoke English and used standard American technology. Would they change that much?'

'Sometimes you really are an idiot, Nat,' Zanna said. She was back to cosying up to Barong the Gorgeous, back as well to gibing at me at every opportunity. 'Like, we descended from the ancient Romans so we should be able to speak perfect Latin.'



‘Your sister’s correct, I’m afraid,’ Hugh told me. ‘I should not have been able to translate their weather signals so readily. In fact, I’m surprised their culture didn’t Spike again within a century of their revival. Our own technological society only took a decade or so after the start of the 21st century, although admittedly that was in circumstances of—’

‘They are under a geas,’ Barong said, looking up from his dreamy communion with Ferdy.

‘A what?’

‘A prohibition. They are forbidden. That is my surmise.’

‘Cool surmise,’ said Zanna, but she didn’t look very pleased.

‘No advanced technology?’

‘In my evaluation, the Gaia mind of this future has blocked the development of certain kinds of advanced knowledge, yes,’ Barong said, nodding gravely.

‘Okay. Wicked cool. So what’s that?’ I gestured into the sky above us with what I hoped would be taken for a carefree wave. Actually I was petrified by what I’d just seen arrive.

‘Oh shit,’ Zanna yelped, and dived for her silly little cross-bow.

The last thing to swoop down out of the sky on top of us had been an illusory dragon. This unidentified flying object was no illusion. The curve of its hull caught the Sun as it swung over us, coming fast almost without sound except for the faintest whisper of air from its leading surface. Beautiful, sleek, and probably deadly, it looked like a manta ray, wings swooping downward from a lethal wedge of black glass.

‘I don’t think it’s friendly,’ I said in a very small voice. ‘Zanna, it might be better not to wave a weapon at it. Could get offended.’

The craft landed a couple of hundred yards from us, lowering itself onto the grass with a sigh. Immediately a hatch in its side slid open and two quite ordinary humans in white lab coats emerged. They stood on the grass beside the manta ray and looked at us. We looked at them. I very nearly burst out laughing. Someone was sure as shit pulling our leg.

One of the two crew, a dark-skinned man with thin lips and a broad nose, wore spectacles with thick black rims, retro Elvis Costello. His companion, blonde hair in a bun, held a clipboard in her pale hand. Both wore those little tags that tell you how much radiation you’ve absorbed when you find yourself trapped inside a nuclear reactor. The pair of them were preposterously normal—they could have been laboratory workers from any mid twentieth century research institution, or movie thereof. I stifled my giggles. Seven hundred forty millennia from our own time and these two comic opera wonks are the first people we get to meet?

‘We might as well have stayed at home,’ I said.

‘I think it means they’re friendly,’ Hugh said.

I said, ‘Just because you work in a lab yourself...’

‘Surely they dressed up like that so as not to alarm us,’ Hugh said. ‘That couldn’t possibly be the way they usually get around.’

‘Maybe they’re members of an historical society, you know, Society for Creative Anachronism,’ Zanna said. ‘Perhaps they re-create great moments in science—Archimedes jumping out of his bath, Galileo throwing rocks off the Tower of Pisa, Madam Curie irradiating her hand...’

‘Shut up, Zanna,’ I said. ‘And put that cross-bow down. In case you haven’t noticed, those two aren’t armed.’

‘I wouldn’t bet on it.’ But she slowly laid the cross-bow on the grass and stepped back.

The two in white walked towards us, stern-faced. Ferdy ran to meet them. He gamboled around their legs as they approached. The man patted his doggy head cautiously, peering down through his glasses, in rather the way you might approach a mythical but benign beast you’d only read about in books. When they were a couple of yards away the woman with the clipboard spoke for about thirty seconds in a language we couldn’t understand. I had the sense that she couldn’t understand it either. In fact, I got the clear impression that she wasn’t very fluent; she seemed to be parroting something she’d learned by heart.

‘Sorry,’ Hugh informed her, rather pointlessly I thought. ‘We only speak English and Bahasa Indonesia.’

The clipboard woman spoke rapidly to her companion. Whatever language she was using now, all grunts and snarls, it wasn’t the one she’d been trying out on us. The geek with spectacles said something in reply and the female scientist detached a piece of paper from her clipboard and handed it to Hugh. The rest of us crowded round and scrutinized the paper, which was covered in runes, or something close to old Celtic magical inscriptions.

‘This doesn’t look very scientific,’ Hugh said, and you could hear the disappointment in his voice.

‘I don’t think it is their own writing,’ Barong said. ‘I think they think it is our writing.’

‘Oh, great,’ Zanna said. ‘They think we’re a coven of witches. Wicca workers. I’m a weird sister.’ She started hunching around in a circle, crooking her fingers and pulling faces. ‘Tongue of newt and Thane of Cawdor, double trouble, toil and bubble,’ she shrieked in a wavering voice.

The two in lab coats stared at her in horrified fascination.

‘Zanna,’ Hugh said, ‘if you are not going to make sensible suggestions, it might be better if you said nothing at all.’

‘Show them your notepad,’ Zanna said. ‘That looks properly scientific. That’ll convince them we don’t ride around on broomsticks.’

‘Not a bad idea, actually,’ Hugh said. He slipped the small back-back off his shoulders, started to undo the clips. Immediately the woman shouted something and waved her clipboard about. The man stepped back a couple of paces, not taking his hands out of his pockets.

‘They must think you have a weapon concealed in the bag, Hugh,’ said Barong.

Hugh lowered the back-pack to the ground, making sure he did nothing abrupt or menacing. He nudged it closer to the woman with his booted foot, and the neat notepad computer slid out of the open top on to the grass. The guy babbled in excitement, and the woman gabbled back. Very carefully, eyes shuttling behind his thick lenses, the man bent and eased out the machine. Somehow he managed to raise the screen, exposing the keyboard. He prodded a couple of keys. Nothing happened.

‘Flick the power switch,’ Hugh said. Of course, they didn’t have a clue what he meant. He mimed the

shape of the notepad, then twiddled his finger at the back. The woman's eyes lit up, and she grabbed the computer, studied it carefully, and turned it on. When the color menu came up, she nearly dropped the pad in her excitement. She and the black dude seemed relieved to find that it wasn't whatever they'd been deadly scared it was, and equally depressed, I guessed, because they couldn't read the display.

Hugh wiggled his right index finger in a circle, then punched through it.

The man reached over, found a round icon on the screen, prodded it. He yipped with amazement. I crept around behind the oblivious pair. The screen had opened a direct feed from the global positioning grid, showing a beautifully realistic flat picture of earth from space. Not as impressive and in-depth as the image in the gravity train, but hey. The eastern edge of the world was in darkness.

'Guy,' the woman muttered reverently.

'Guy?' said Zanna. 'Terrific, she's found the singles' chatline.'

'Gaia,' Hugh said, drawing out the long vowels.

The two archaic scientists turned to stare at him. They put down the computer and the woman gestured in an unmistakable way at the hovering, humming manta.

'I think we're being invited on a magical mystery tour,' Zanna said.

As it turned out, that was precisely what we weren't being invited on. No, what we were being invited on was a magical scientific tour. Hold the magic.



The manta fitted us all comfortably, seats deep and relaxing. What had seemed like opaque black glass on the outside allowed panoptic vision from the inside. The craft went up like a high-powered elevator, noiselessly, and we didn't feel a thing.

'Total control of inertial forces., Hugh said, hardly breathing, awe-struck.

'This is an even more advanced technology than we experienced in the gravity tunnel,' Barong said.

'Only to be expected,' Hugh commented, searching for a look of composure. 'After all, this is many hundreds of thousands of years farther into the future. Their science and technology must be vastly more advanced.'

He was wrong about that, too. As we would shortly learn, in the most surprising ways.



The manta flew very fast over drear plains and snow-covered mountains, descending into the middle of a small town in a snowless depression entirely surrounded by peaks on three sides, the rocks and crags a grim gray against the dazzling white of the snow in the gorges. On the fourth side, cold sea lapped at the wharves and warehouses. Fjords, not the kind of geological formations you expect to find a short flight north from California. On the horizon a couple of icebergs flashed in the Sun. The town itself was evidently built from the local stone; the houses were mostly massive double story structures with tiny

windows and heavy shutters. A small crowd of people had gathered to watch us land, dressed in a variety of clothing styles—but the commonest outer garment was the white laboratory coat that our two new friends, or captors, were wearing. We left the manta but weren't permitted to remain in the cold outdoors for long—a good thing, given that all poor shivering Barong wore was his sarong and an old sweater of Zanna's which was far too small for him anyway.

They hustled us into a large stone building and along corridors and down a flowing escalator without steps that seemed to be leading into a basement of sorts. Finally we were brought to rest in a room containing a huge drum-like machine equipped with a flat trolley that floated above rails leading deep into its heart. The nearest thing to it that I'd ever seen was a brain-scanner, the sort doctors use to find out if you've got tumors—CT scan, PET scan, functional magnetic resonance imaging, you know the kind of thing, it's on all the shows.

'Some sort of brain-scanning device,' Hugh proposed diffidently.

'You might be right,' I said, because I figured he might be offended if I said, No shit, Sherlock. The fact is, I've certainly seen more medical television than Hugh, even if he is a mathematical physicist. When I was growing up I loved E.R. and Chicago Hope and all those hospital soaps.

Our taxi drivers were joined by half a dozen of their kind. An old woman who appeared to be in charge indicated by gestures that Hugh ought to lie down on the trolley. She seemed quite friendly; certainly she didn't look as if she expected any resistance. But Hugh wasn't too anxious to poke his head into a machine of unknown specs. I suppose it brought back all too cruelly what had happened to Mom, and she hadn't even been anywhere near any brain-tap machines. The old woman gesticulated some more, brought one hand up to her mouth and made quacking gestures, like a motor-mouthing duck.

'I think she is saying that the machine will teach you to speak their language,' Barong said.

'Yeah, maybe,' Hugh said. 'But why can't the machine teach her to speak our language?'

Hugh made the same sort of quacking gestures the old woman had made. Then he pointed at the old woman and indicated the trolley.

The old woman beamed with delight, but made a sort of you-first gesture.

'Overly polite,' Hugh said dryly. 'I don't mind at all if she goes first.'

'I think she's being reasonably logical,' Zanna said. 'The machine can't teach her English until it's learned English itself by scanning your brain. Go on, Hugh, hop on the cart. I'll do it, if you're chicken.'

Reluctant, but shamed into it, Hugh allowed himself to be helped onto the trolley. A bright yellow shell of light sprang up around his head and seemed to lock him in place, presumably to keep his cranium from moving during the procedure. The clipboard woman gave the levitated trolley a shove and Hugh disappeared into the depths of the high-tech cave. The watchers gave a muted cheer.

They kept the poor man in the drum for over an hour. Unlike CT scanners and those other old-fashioned late-20th century gadgets, this one didn't rotate or make a terrible booming noise or tear the metal fillings out of your teeth and the watch off your arm. Like the manta ray aircraft, it was superb technology far beyond anything we could explain, but still it had an odd cheesy resemblance to stuff we could easily imagine. Certainly it lacked the upmarket superscience you'd expect to find in a cutting-edge hospital or research facility of the zillionth millennium. Some force clearly was retarding these guys—and I was developing a hunch that it was the spectacular being they called 'Guy', the one we knew (or thought we did) as Gaia, the planetary AI mind.

While we milled around, getting hungry and bored, watching the preparations on Hugh from a narrow angle, three young people with closely shaved heads came in with trays of steaming, fragrant stew and a carafe of sparkling water. Hugh kept yelling out peevishly, 'How much longer? This is boring me witless. What are you eating out there, it smells delicious. Keep some for me. Nat, if you eat it all, I'll skin you alive.'

'Hang in there, Hugh,' Zanna yelled. She made loud smacking sounds of eating with gusto and relish. Actually, she was wolfing down more of the tasty vegetarian gloop than I was, although I was also getting stuck into it because I was starving after our flight. We put a bowl on the floor for Ferds, who didn't seem to mind the lack of meat.

Finally they hauled the trolley out and collapsed the force-field clamp. Hugh sat up testily, spouting crabby gibberish. At least that's what it sounded like to us. The old woman grinned happily and answered him in kind. Soon they were settled down to a really good pow-wow over a fresh bowl of chow and a glass of mineral water. The clipboard woman approached me. I ducked behind Barong.

'Your turn, wonder boy,' I insisted.

By evening we had all been put through the machine, as had quite a lot of our hosts as well. For a language class, it sure beat the shit out of Speak French Like a Diplomat in Forty Days at Home with Just Six CDs, although just lying there on your back for an hour having your cortex stirred by a metaphorical spoon was nearly as tedious.

'Why not make a recording and pipe it straight into the rest of us?' Zanna had asked Hugh in annoyance, not eager to lie on her back staring at yellow light inside a drum for 70 minutes.

He started blathering some incomprehensible stuff, then caught himself and switched back to English.

'Neural specificity,' he explained, which wasn't a whole lot clearer. When Zanna growled in a menacing way, he caught himself again and said, 'No two brains are alike, dear. The broad architecture is similar, but we build up our memories and faculties in a chaotic way. This machine is able to extract certain common elements from each individual brain, but it uses a prodigious amount of processing power. I'm afraid it requires separate tuition for each of us.' He turned to the old woman. 'My word, this really is very excellent cuisine. Do you think I could have another bowl?'

Oddly, the new language didn't feel like a new language at all, although I could stand outside it and recognize that it was agglutinative, its syntax quite distinct from any of the classic Indo-European languages. Yet I might have been speaking it all my life—it was now no more remarkable to my gulled brain than English itself. I played around with it, and managed a passable rendering of 'Three Blind Mice'. I decided to postpone my translations of the works of Shakespeare and Lewis Carroll. Those of our hosts who had been programmed to speak English 'like a native' didn't seem to regard their new skill as anything special. The most hilarious aspect is that they all spoke exactly like Hugh, so despite the chaotic neural effects they must have been using his brain pattern as some kind of general Chomskyan grammatical template for English. In the background of my own mind, I could feel myself worrying at an X-bar theory of the language, and not getting very far.

The clipboard woman, whose name was Green-Tree-Frog-in-a-Season-of-Plenty, led us to a room fitted with rather spartan-looking bunks and, as it turned out, rather confusing bathroom facilities off to one side. She wouldn't allow Ferdinand to come with us, gesturing to one of the shaven-head servants to lead him away to separate quarters. The kid dropped a sort of leash over the pup's head and started for the door.

'Hey,' I yelled, when I saw what was going on, 'that's our dog, leave him alone.'

‘Ferdy,’ cried Zanna, simultaneously, ‘sit!’

Barong glanced at the young man who cautiously stood holding the leash. Something seemed to pass between them, a kind of look of recognition, although of course they’d never met. I got the feeling that golden boy already felt more at home with these people than he ever had with us.

‘It is okay,’ he said soothingly. ‘Ferdy and I are of one mind. Let him go. The girl will do him no harm.’

Girl? I looked more closely. Beneath that radical punk hair style was a young woman’s face—in fact, a quite pretty face, even without any trace of make-up. Barong was smiling politely at her. She took Ferdy and was gone. His eyes lingered on the door. I caught Zanna’s suspicious glance before she covered it with a shrug. Uh-oh. Trouble in Science City.

Each of the bunks had its own light, like an aircraft seat, leaving the room largely in gloom. Ms. Frog assured us we must be tired. Actually we were; it had been a long day, and the green flash jetlag thing didn’t help. I found myself yawning, although I wasn’t very excited by the prospect of sleeping on what looked like a very hard bunk.

‘Tomorrow, everything will be explained,’ Green Tree Frog said.

‘Including the secret of the universe, no doubt,’ Zanna said sarcastically.

‘That as well,’ Green Tree Frog said. She smiled politely and made herself scarce.

We washed up and explored the mysteries of using the bathroom—a creepy device that emerged silkily from a shower wall and, uh, slickly inserted itself into appropriate places, painlessly but not without drawing a scream of outrage from Zanna and a yelp from me, as well as other things—then stood about aimlessly for a while in the dim communal room, tongue-tied in two languages, just plain speechless after the huge changes we’d been through. Barong put his arm around Zanna and gave her a comforting hug. I hung back, feeling wretched.

‘Well, I’m heading for the cot,’ Zanna said after a moment, and I realized with surprise that I couldn’t tell if she’d said it in English or the True Knowledge Tongue. (Oh-oh. Where did that come from? How interesting—it was the name they gave their own language. Or maybe it could be rendered "the Science Speech".) Zanna skinned back down to her underwear without any embarrassment and hopped up to one of the top bunks.

‘Hey!’ Her head appeared over the edge. ‘This is unbelievably cool! Barong, you’ve gotta try it.’

‘Over here, son,’ Hugh said hastily. ‘I’ll take the bottom bunk on this side, you can have the top one. Does anyone know how to turn the light off? Oh—’

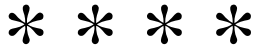
The very words he uttered to ask the question somehow held their own answer. In the True Knowledge Tongue, you activated the illumination you needed by adding a single vocal particle—the sound unh—to the start of the word for "artificial light". To turn it off, you added emh to the end of the word. The household maintenance system must have been monitoring everything anyone ever said, like a perfect and I hoped discreet servant, and it carried out your merest wish the moment you spoke it.

Barong vaulted to his top bunk, and after a moment gave a happy cry. ‘Yes, this is very cool indeed, Zanna.’

I wondered what they were talking about, and lay down grumpily on my own lower bunk without taking any clothes off. I can’t help it if I’m overweight, it’s not as if I eat all that much more than anyone else, but I don’t have to advertise my bulges in public.

As I plopped on the bunk the air itself seemed to seize me. Gentle invisible fingers caught my fatigued body, held me gently on a layer of soft firmness, if you see what I mean, that was way smoother and more relaxing than any wooly sheepskin or satin sheet. Tensions palpably drained from my exhausted muscles and nerves.

For a long drowsy moment I lay there, thinking of Mom, too numb for the moment to weep, wishing she were with us. Then I used the emh word and switched off the light in my snug little cave. And everything went away for a while, including me.



In my dream, something terribly sad happened. I couldn't bear to look. Zanna ran past me, distraught, arms stretched out ahead of her, but she had become a kind of wild animal, perhaps a deer, with foam flecking her muzzle. A grinding ghastly machine hacked its way through a forest, making a noise like thunder. My face felt tight, in the dream, and my nose had that awful swollen feeling you get when you're about to burst into tears. I was hurrying down Cole Porter Road looking for Mom, and she wasn't in any of the shops. At my back I could hear an unbearable sound. A man was hunched over on the sidewalk doing up the laces on one shoe. No, he was just pretending, so he could hide his face. The sound was his weeping. It was low, muffled, absolutely heart-breaking—and I slowly understood that my eyes were open in the absolute darkness, I was awake, and it was my father crying.

I lay completely still on the wonderful, soothing surface of my futuristic bed, and wanted to scream, or run from the room. I wished above all things that I could just go back to sleep. It was unbearable to hear him like this. I kept my eyes clenched shut. The sobbing continued. I got off the bunk and spidered in the total blackness toward Hugh's stifled sobs. Barong was in the top bunk, so that meant Hugh was in the lower.

'Are you all right, Daddy?' I whispered as softly as I could, hideously embarrassed. In the dark I reached out one hand, and he caught it in his own, gripping tightly. His hand was wet from wiping away his tears.

'I was such a thoughtless bastard, Natalie,' he said. I could hear him pushing himself up, heard his feet come down on the floor. I crouched uncomfortably beside him in the darkness. Neither of us said the unh word. Were Zanna and Barong awake? I hoped for Hugh's sake that they weren't.

'What do you mean, Daddy?' I knew what he meant, and deep down I agreed, but I hoped with all my heart that he wouldn't tell me.

'I just let Grace and you girls wonder where I had gone because I couldn't be bothered explaining what was going to happen in the vacuole,' he ploughed on in this controlled voice. 'I was so wrapped in my own excitement and plans that I just went ahead and switched the Feigenbaum cascade on again. I knew full well that the last time it had taken me nearly two full days into my own future, and the time before that less than three hours. It didn't occur to me for a single moment how upset you'd all be.'

Two days? That must have been during the time Grace was in New York with her publisher, and Suzanna was holidaying in Florida. Me, I was living in bliss with Talbot, my beloved theory professor. Oh God, oh God, Tal! Gone! 'Come on, Hugh,' I said, clearing my throat, my own eyes wet in the darkness, 'you left Mom that message on her computer.'

'Typical,' he grunted. He clung onto my hand, and I could hear him rocking back and forth. 'Really typical. Always easier to stand there giving a pompous speech or send someone an email. Can't just say

straight out how much you love them. And then she's... Now she's—'

There was a long silence, and he was weeping again, in agony. I still felt tremendously embarrassed, but privileged as well. This was our stuffy old funny father just letting loose and saying everything he'd been bottling up for ages. Tears gushed down my own face. My nose was clogged, and I had no Kleenex.

'She knew you loved her, Daddy. We all knew.'

'She was the brightest woman I ever met,' he said, and then let go of my hand and found his own hanky and blew his nose. If that didn't wake up the rest of them nothing would, but neither Barong nor Zanna said a word. 'I took it all for granted. As if Grace and I had turned into one person, Nat—like the Bible says, "husband and wife shall be one flesh". I thought we were one flesh, but all I was doing was acting as if her concerns didn't matter. As if she were just there for my convenience.'

I frowned, and shifted my cramping legs. 'I didn't know you were religious, Hugh.'

'Not in a church-going sense, Natalie. Still, sometimes I wonder if Barong isn't right about Gaia.' He sighed. 'That's beside the point. I was just such a—'

'Hugh, this is absurd,' I said. Time to get seriously serious here. 'How could Mom think that? She was cool.' I rushed on without thinking. 'I do think she treated you rather like Suzanna and me, sometimes.'

After a moment's silence, Hugh said, in a slightly odd voice, 'Oh?'

'Well, sort of.' I added hastily, 'I don't mean that disrespectfully, Dad—'

'No, go on.'

I was covered in confusion. 'What would I know, I'm just the girl who can't say yes, left at the altar, left at the curbside actually. Well, that Hugh Knows Best routine she was always pulling. That's what we grown-ups do, right? Games. Play-acting.' A shiver went all the way through me, and suddenly I realized how very tired I was. And how much I missed her. 'Mom ran our whole world, Daddy. And she let you play in the garage.'

'Not a flattering portrait, sweetheart,' he said in a very low voice, but he'd stopped crying. In the dark, he leaned forward and kissed me on the forehead. 'Off you go, Nats. You're a good person. Sleep tight.'

From the far side of the room, crabily, Zanna muttered: 'About fucking time, too.' She pretended to be tough, Zanna did, but you could hear the catch in her voice.

## Fourteen

Ferdinand bounded through the door with a happy bark or two,



and the lights came up in the room. I rubbed the sleep out of my eyes. The pup was attended by his three young bare-skull servants; he ran quickly around from one bunk to the other, sniffing for our scents. I reached out, yawning, and gave him a quick pat. To my chagrin, he was looking in much better condition than he'd managed in at least several days and 741 thousand years, fur freshly shampooed and brushed. He even smelled nice, but in an authentically doggy way—none of that carpet-shampoo floral rubbish

that makes dogs hate themselves.  
When he found us all in place, he  
yipped in satisfaction, and  
crouched beside Barong and  
Hugh's bunk.

'Morning, all,' Hugh called. He didn't avoid my eye; neither did he acknowledge our midnight conversation. Strangely, Zanna said nothing about it either. The child, I thought, is growing up at last. Maybe I was, too.

A rally of greetings broke out, all in the True Knowledge Language, and then everything started to go to pieces.

'You must permit us to attend you,' one of the three told me, trying to tug my rank sweat shirt over my head. 'The refresher awaits.' His name, he'd told me politely, was Mental Hygiene. There were squeals from Zanna as well, and a flustered refusal of such personal attention from Hugh.

Controlled Experiment, the girl who had led Ferds from the room the night before, had less trouble getting Barong into the bathroom. Hugh called gruffly, 'Hey, let's keep things segregated, shall we?' Barong ambled back almost at once into the sleeping quarters, rather sheepishly, retying his sarong around his waist. I couldn't help noticing the bulge of his erection. But then men have those when they've just woken up, don't they? Controlled Experiment just looked confused.

'What kind of name is that, anyway?' Zanna muttered. 'Troll for short, I'd say.'

The third young person was another boy, Fourier Transform. I considered him with interest. He wasn't quite up to Barong's divine good looks, but he was a well-built guy with a neat skull and lustrous brown eyes. I watched regretfully as Hugh shepherded him and Barong and Mental Case into the bathroom, leaving me and Zanna to stare balefully at poor Troll, who busied herself combing Ferdy's pelt with her long fingers.

'The thing is,' I said. 'We're all quite used to taking showers and cleaning ourselves up, you know, by ourselves. Despite the disgusting facilities you people use.'

'This is for a special occasion,' Controlled Experiment said. 'You are to meet the Méthode herself.'

'Who's the Méthode?' I said.

'The Méthode Scientifique is the embodiment of all that our society stands for. She is the king.'

'Queen,' I said.

Controlled Experiment lowered her voice. 'If you can tell just by looking what gender she or he is, you've got better powers of observation than I have.' I felt a faint glow of warmth towards Controlled

Experiment. She was the first person we'd met in the place who evinced the slightest edge of irony. What's more, she seemed to be distancing herself, however mildly, from what was going on. 'She is in ultimate command, she directs the war against enchantment.'

'War on enchantment? Like, magic?' Zanna was scornful. 'Crackpot loonies and their gurus.' The true tone of our hard-nosed skeptical father resounded in his daughter's voice.

'But surely everyone knows this,' the girl said in new confusion. 'The whole planet is in a perpetual state of war—True Knowledge versus Goetics.'

Interesting. 'Ah. And we've ended up in the True Knowledge camp,' I said.

'Indeed you have. Doubtless the Méthode, when you meet her, will inform you of the part all three must play in defeating the Goeticians.'

Zanna hated losing the thread, any thread. 'Say what?' I allowed the ambience of general ignorance to persist for a long satisfying moment before I spoke in an off-hand way.

'Goetia was a classic form of occultism. Of sorcery, in fact,' I said, 'power over spirits, you know, before the rise of science. Don't look at me like that—it was an important discourse up until the late middle ages.'

'And you know this crap why?'

'I know considerably more crap than you could begin to imagine, Zanna,' I told her loftily. 'Carl Jung's psychology delved deeply into alchemy. Cultural theory is riddled with this arcana—Gaston Bachelard, Michel Serres, not to mention Bruno Latour and Karin Knorr-Cetina.'

'You're making this up.'

'I wish.'

'And Dad paid good money to send you to college,' Zanna said darkly. 'If he'd known what sort of-

The lab girl broke in, nodding her head, although lowering her voice. 'It is intolerable! The Goetic enchanters think differently, as you say. They base their lives upon deviations excluded by those who command the ideological heights!'

'Tut tut,' said Zanna. 'Obviously should be hounded off the planet.' Sarcasm? I wasn't sure. Clearly, she had it in for poor Troll. 'Can't have crazy degenerates working spells and corrupting minors with superstitious talk. They'll be turning lead into gold next. They simply have to go.'

'As a loyal citizen of the Scientific Community, I agree with you completely,' Controlled Experiment said.

'I'll bet you do, Troll my old pal,' Zanna said. Whatever was going on in that feral mind? 'I think we agree with each other rather well.' Then my sister suddenly embraced the startled girl and kissed her. That left me as rattled as Troll.

Hugh and Barong and Mental emerged from the bathroom, glowing with cleanliness and mental hygiene. Both of our men wore blazing white lab coats, obviously laundered in enzymes and added fluorescents to ensure that they were whiter than white and brighter than the neighbors'.

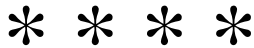
'Okay,' Hugh said. 'You two go get cleaned up, we're scheduled to meet the personification of the scientific method herself.' My father sounded totally enthusiastic. Whatever Mental had told him, it hadn't

induced the same skepticism that Zanna and I were feeling.

‘Yeah, it’s wonderful,’ I said. ‘We’re about to be conscripted into the fight against incorrect thought.’

‘In a way, darling, it’s what I have been doing all my life,’ Hugh said, opaque as usual to irony.

Good grief. ‘Come on,’ I said to Zanna and Troll. ‘Let’s get this ritual purification over. It wouldn’t be right and proper to meet the Méthode Scientifique smelling of human sweat.’



Our audience took place in the Grand Laboratory. Our sweat might have been laved away, but the stench of parody was in the air. Who were these preposterous lunatics? I was halfway convinced that we—or maybe just I alone—were caught up in another VR sim. Yet somehow it seemed grittier than that. I believe, according to some daft Christian saint, because it is absurd. I knew the feeling, and it rattled me.

The laboratory was more like a museum than a place of experiment. Even I, in my liberal arts ignorance, recognized some of the equipment lying around. Behind the lab stool on which the Méthode Scientifique sat was a Tesla Coil in a flywire cage. Tesla coils are great fun, Hugh had entertained us both in his lab one afternoon when I was small and Suzanna smaller; they make a huge amount of noise and send lashings of lightning all over the cage, but they are of no earthly use and everybody can understand the simple electrical forces involved, even me. The Grand One had used something similar to scare the shit out of us, or try to. These megalomaniacs just never seemed to learn. Well, no, that seemed unlikely. This was a trope, presumably, a kind of conventionalized trick; we were meant to see through it, perhaps, or work with it. Whatever.

The Méthode Scientifique herself was an animated mummy, skin so leathery it might have been transplanted from an elephant. Naturally she wore a full-length lab coat and rubber, acid-resistant boots. An old-fashioned calculator stuck out of her top pocket, more ancient than the HP 12C I’d borrowed from Grace, a cheesy gadget with more function keys and diodes in different colors flashing at random than an entire control panel on a Space Shuttle. She raised a hand in greeting.

Zanna muttered in my ear, ‘And now that ridiculous coil goes off.’

Right on time.

When the thunder and lightning had died away, the Méthode spoke her first words. ‘E equals,’ she said and looked at us in turn.

‘Come on,’ Zanna muttered gleefully. ‘All together, on the count. One, two, three—’

In unison, Zanna, Hugh, Barong and I all shouted: ‘Em See Squared!’ We sounded like a bunch of school children having our rote learning tested. Zanna couldn’t stifle her giggles, amid shocked murmurs from some of the onlookers, and a patter of applause of some of the others. Then both sides looked at each in some confusion, and a numb silence fell in the great room.

In a strangled voice, the Méthode posed a second shibboleth:

‘E Psi equals—?’

I blinked at Zanna, who shrugged and rolled her eyes.

‘Well,’ Hugh said, ‘I don’t know if you still use the same notation, but  $E \Psi = \hbar d \Psi / dt$ .’

The Méthode looked discomfited. ‘This is an excess of rigor, sir. It is our custom to give as antiphon the simple time-independent form of the sacred Schrödinger Equation:  $E \Psi = H \Psi$ .’

For some reason this excruciatingly abstract exchange must have struck Zanna as intolerably amusing; she burst into a fit of raucous laughter that ended only in choking, and scandalized looks from the congregation.

‘Are the ancient equations of Relativity and Quantum Theory a cause for mirth, my child?’ the Méthode asked reprovingly, after a stony silence.

‘As mantras, yeah,’ Zanna said.

Hugh started to speak very quickly. ‘I think what my daughter is trying to convey is our conviction that the pursuit of scientific knowledge is both a sublime and a joyous endeavor.’

‘Indeed it is,’ the Méthode croaked. ‘Some would attack its sublimity and sap its joy.’

‘Bastards!’ Zanna said. Nothing would shame that girl.

‘Shut up, you cretin,’ I hissed under my breath.

‘They are indeed dysgenic,’ said the Méthode. ‘They care nothing for peer review. Falsification is a word they use only as a curse. Double blind is a foul ritual they practice with dirty handkerchiefs. Show them an hypothesis and they call it proof. Show them proof and they bare their asses.’

‘Shameless!’ Zanna said, shaking her head in disapproval.

‘We must fight fire with fire,’ the Méthode informed us, in an aged but ringing tone. ‘With your help, we will banish ignorance, superstition and false Goetic enchantment for ever.’

‘Certainly, but how may we help?’ Hugh asked. He stepped forward, rolling up his sleeves. ‘I have been a scientist all my life, yet I have never been able to fathom the minds of the gullible and the ignorant. It seems to me that their obstinate refusal to acknowledge truth when it is thrust in front of their noses is the result of early educational deficits so severe that no amount of patient explanation will—’

Hugh wasn’t allowed to finish. Just as well, in my opinion. He has his merits, my dear father, but he loses the plot when he gets the rationality bee buzzing in his bonnet; he becomes, not to put too fine a point on it, completely irrational.

‘This is a completely rational assessment,’ the Méthode said with the greatest approval. ‘Sir, you are plainly sent to us to carry our plans to their fated conclusion. We will be written up for eternity if this day’s work leads to verifiable results, as verily it will!’

‘Well, yes, if you say so,’ Hugh said, mildly abashed. ‘Um, what exactly do you have in mind?’

‘Not my mind but theirs,’ cried the mad Méthode Scientifique, flicking her calculator in a frenzy. ‘We shall prosecute the glory of Guy! We shall change their minds for good, and forever. We shall infect them with the memetic virus of Truth! You four and your devoted animal shall be our vector, our agent, our loving carriers of the plague of True Knowledge!’

Zanna and I exchanged a sour glance. I couldn’t decide what Barong thought of the outburst; he was mooning in the direction of Controlled Experiment. It wasn’t hard, though, to see that my father was

rather put out.

‘I find your metaphor in questionable taste,’ Hugh said sharply. ‘Perhaps your hygienic and advanced scientific culture has forgotten the horror of a true plague—a sickness that infects bodies and brings fever, pain, even death.’

‘I intend no figure of speech, visiting lab-man. We shall invade the denizens of Goetics’ polluted land with an evolved retrovirus, one that will certainly evade their detestable enchantment defenses and bring their cities to their knees. Make them sick, you say? They will burn with the fever of truth, feeling its flame in their pain-racked flesh!’

Hugh drew back, horrified, gazed at the faces around us. Of course, being Hugh, he let the old bitch have it with both barrels. ‘Madame, I don’t believe you grasp the magnitude of the enormity you suggest. I greatly admire your science and technology, judging by the splendid aircraft that fetched us here and the subtle machine that taught us each other’s tongues. Yet you mean to infect us with some loathsome disease and then send us to your enemies?’ He paused; there was silence, no rebuttal. ‘This plan to best your foes by using bacteriological warfare—well, it is disgraceful and disgusting. I shall have nothing to do with it.’

The Méthode’s leathery cheeks burned with anger, but she controlled herself. ‘Sir, we are off to a poor start. Somehow you have misinterpreted my results. Let us begin again and replicate the exchange, hoping for a more fruitful conclusion.’

‘She’s as bad as Hugh,’ Zanna muttered. ‘Yack yack yack.’

I was watching our three hairless servants. They seemed terrified of the emotions in the room, and stood off to one side, cringing but steadfast. Controlled Experiment caught me looking at her, and I thought she gave me the slightest nod. I still didn’t know what her game was, but she obviously wasn’t one hundred percent behind the old biddy and her disgraceful plans.

‘I believe I understand only too well,’ Hugh was saying. ‘You assume that because we are also science users, we must be your allies in some ideological war you’ve chosen to wage with an enemy we’ve never seen. Once we learn more of both societies, perhaps that will prove to be so. For now, I can only regret that people of your accomplishments can’t come to a decent settlement through the power of logic and good will.’ He paused, grew thoughtful. ‘Indeed, is it possible that we, as outsiders to your quarrel, might act as peacemakers and intermediaries? I would gladly carry a message of reconciliation to your foes, who might reject such an offer if it came directly from you.’

Green Tree Frog burst out of the huddle of scandalized scientists, her lab coat in disarray.

‘For shame, sir! Meet with Goeticians? Offer them terms? This is most unscientific!’

‘I begin to wonder if our visitor is a spy,’ said the dark fellow who’d first met us, Ms. Frog’s colleague, who went by the equally charming name of Banded-Red-Warbler-Awaiting-Dawn. ‘Since we could not detect their arrival until the first tachino pulse, perhaps that is due to their origins in the hated camp of sorcery.’

Starting to put two and two together again, I stepped forward and looked up at him, fists on my hips. ‘You think these wizards won’t be able to detect us any better than you did, that’s it, isn’t it? You want us to be your Trojan Horse!’

‘Horse?’ He flapped his hands. ‘The words do not seem to have been conveyed in the translation protocol.’

Plainly, he was stalling. Out of the corner of my eye I noticed a group of beefier specimens entering the laboratory, armed conspicuously with what looked, so help me, like comic book rayguns—long crystal tubes with flanges and radiator strips and flashing little lights. Laughter bubbled in me at the silliness of it, until I realized that the weapons were almost certainly real—and, presumably, utterly lethal.

I swallowed hard. ‘A Trojan Horse is when you smuggle in your soldiers by making them look, um, safe and harmless and—’

‘Innocuous,’ Hugh said. ‘Madame, I am shocked. What was the plan, someone pretending to be a spy who’d sneak us out in the dark of night and convey us to the Goetic realm?’ I noticed that he very carefully didn’t look at Controlled Experiment as he made this accusation.

Strangely enough, it was the boy, Fourier Transform, who turned white, then red, then burst into a fit of terrified coughing, and finally went scurrying backward away from the gathering. As he reached the end of the huge laboratory, every eye following him, he turned tail and ran from the room.

Hugh waited until everything had settled down into seething general anxiety before he spoke again. ‘I see. My perspicuous daughter Natalie was correct.’ I glowed, frightened though I felt. ‘You consider us the ideal patsies to carry your filthy bugs across the border. Well, forget it. I don’t believe you know whom it is we represent.’

‘On the contrary,’ said Banded Warbler, in perfect English. ‘It is obvious that you are traitors, and should be culled.’

‘Killed?’ Zanna said with a croak. ‘Hey, that’s a bit extreme.’

‘Culled,’ Warbles said testily. ‘Selected out. Removed from the tabulation. Most scientific.’

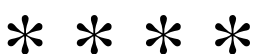
‘Oh, cool, yeah,’ said Zanna, fingers twitching for her missing cross-bow, ‘scientific, eh. Quant fucking suff.’ I stared at her, and she muttered, ‘A book I read once. You didn’t know I could read, did you?’ Keeping her spirits up with banter; I was impressed, I didn’t think that happened outside books, either.

The Méthode Scientifique herself rose up to her full height on her platform and looked down contemptuously upon us.

‘I see that we have been misled by our great hopes. You have already failed in this mission to four decimal places, and the log is hardly opened.’ She pushed a tab on her gaudy calculator, and a bugle’s tone sounded. Armed goons closed in. ‘Return them to secured quarters,’ Méthode ordered. ‘We must recalibrate this methodology.’

As we were hustled away, she called to my father: ‘Fear not, lab-man, you shall serve the cause of Logical Truth whether you wish it or not.’

‘Not-is is not is-not,’ Hugh yelled defiantly over his shoulder, and I saw the Méthode’s old face frown before the goon yanked me the other way. She was probably as baffled as I was, because I didn’t have a clue. I suspected he didn’t either.



Controlled Experiment woke me at about three in the morning, at least by my body’s badly jangled internal clock. She held her hand lightly over my mouth to make sure I didn’t scream. I nearly bit her thumb off in my surprise, but when I saw who it was everything fell into place.

Except that it didn't.

I'd thought she was the fake spy meant to lead us poor schmucks into the enemy camp after we'd been dosed with some fatal plague. In fact, as she explained in a hurried, hushed voice, she was the real spy for the enchantment nation, posing as a real spy pretending to be a fake spy so that the Méthode's secret police would keep an eye on her but leave her alone, to mislead her own people into thinking they hadn't tumbled to her secret role. Or something. It all got very murky, dialectical and multi-leveled very fast. Not-is is not is-not.

'We need to escape right away,' Troll told me, whispering in the darkness. 'They'll expect you to have a flying machine waiting, ready to drop down from orbit, so their guards and doctors will be staked out in the north court.' She pointed south, of course, which confused me even more until I remembered about the magnetic pole flip. 'I'll take you through the lab rats' quarters to the bay. The Goetic People will provide a Sea Serpent.'

'Oh good,' said Zanna, leaning her head over the far side of the bunk. Neither I nor Controlled Experiment had known she was awake and listening, and we both jumped. I banged my head. 'Just what we need—a Sea Serpent. What's that for, pray tell? Meant to scare off the five thousand guards armed with disintegrator rays?'

'With what?' Troll was horrified. 'Guy would never allow lethal weapons! That would undermine the Compact!'

'You mean those rayguns were just for show? Just toys?'

'Toys? Certainly not! What kind of sick society would allow children to play with toy weapons?'

Zanna slitted her eyes, but refused to rise to the bait. 'But they can't kill us?'

'Naturally not. They induce a very severe and painful electric spasm, of course.'

'Of course,' I sighed. 'They don't call you lab rats for nothing, then.'

My sister snorted at that, rather loudly, and in a flash Barong was awake, out of his bunk, and beside us.

'Controlled Experiment, well met!' he said warmly. 'Have you come to lead us out of durance vile?'

'Good God,' Zanna said, 'can't anybody talk ordinary English any more? I think that machine has ruined all your brains.' I had to laugh: she was speaking in the True Knowledge Tongue. My guffaw woke Hugh up, and we all huddled in the darkness plotting our escape.

'We can't leave the pup here,' I said. 'Where is Ferdy? We need to get him out too.' Simultaneously, Hugh was saying, 'Why are we crouched here in the pitch dark? Surely the household system can hear every word we say, even if it can't see us—and I'm sure 700th millennium technology has perfectly adequate infrared scanners.'

Barong said, 'Ferdinand is three rooms down the corridor, and in good spirits. He is eager to rejoin us.' In the darkness, I heard him suck in his breath. 'Controlled Experiment, what have you done? I detect a deep ripple in the local node of the global mind.'

'I've cast a spell,' she said simply.

'Oh, great,' Zanna said. I still couldn't decide if she detested this lab rat or admired her, now that we were on the same side. 'Maybe you could spin some straw into gold and we could bribe our way out.'



‘Don’t be caustic, Zanna,’ Hugh said. ‘Obviously the Goeticians don’t use real sorcery—as real sorcery doesn’t exist, and never has. They must have discovered how to interface cognitively with the planetary AI.’

‘The global Mind, yes,’ Barong said. ‘They have surely learned some of the deep codes that activate ideograms and matter compilers.’

New respect in her voice, Zanna said, ‘So Troll’s spell is a computer command that shuts down the house systems, right?’

‘Exactly,’ said Barong. ‘I don’t know what you’re talking about,’ Controlled Experiment said simultaneously. And Hugh asked, ‘So why are we sitting in the dark?’

‘Goetics must be done in the darkness and murk,’ Troll explained patiently. She lapsed into her freshly-acquired English, probably because her disrespectful remark could not be expressed in the True Knowledge Language: ‘It has nothing to do with being detected by the creepy tech nerds.’

‘Pish and posh,’ Hugh said, and uttered a unh word. The light in my bunk came on, making us all blink and rub our eyes. Controlled Experiment gazed about fearfully, obviously expecting a gang of armed scientists to rush into the room, bent in inflicting cruel negative reinforcement. Nothing happened, luckily. I guess that made my skeptical father a better magician than our tame enchanter spy.

‘If we’re going,’ Zanna said, skinning into her clothes, ‘let’s go.’

We went—picking up the pup en route. Ferdy raced in a quick delighted circle, but somehow Barong persuaded him to contain his excitement. Silently, we did the escape thing: down corridors, around corners, skulk skulk, scurry scurry, you know how it works, all breathless and scared and high on adrenaline and just missing the guards who’ve crossed the path a moment before, every instant of this boosted quite usefully with some nifty spells and incantations from the Troll. About a quarter of an hour later, drenched with sweat and hearts pounding fit to burst, three young women, one of them as bald as a badger, one golden boy, one stocky mathematical physicist carrying a back-pack, and a very clean dog, made it to the vast chilly waterfront gardens of the palace of the Méthode Scientifique.

Naturally, our promised Sea Serpent awaited us, lurking just below the grim surface that lapped the quay.

It raised its great, terrible head as we approached, and uttered a mournful moan like the hoot of an oil tanker. Zanna stopped dead, staring in horror at the monster. She’s never liked snakes.

‘What the fuck?’ she blurted. ‘Are we supposed to ride on the back of that slimy creature?’

True, the Sea Serpent was a bit on the slimy side. Waves slapped at its head and massively scaled spine, ran greasy and dark blue into the Antarctic tide. The moon, almost unchanged since our own time, hung above the cove, and moonlit ripples fled across water and beast. I didn’t like our chances of clinging to its back. It didn’t look terribly bright; what if it forgot we were there, and dived under the surface?

‘Ride on its back?’ Troll laughed sarcastically. I think she was getting rather sick of Zanna’s jibes. She took Barong’s manly mitt in one of her own small, elegant hands, and Ferdy’s high-tech dog leash in the other. The three of them stepped forward to the end of the quay as the Sea Serpent reared up its head menacingly, nostrils flaring.

‘Careful,’ Hugh cried. Too late for quibbles, though, shouts were rising from the garden behind us. Lights blazed on all over the palace and grounds. I guess the warding spell had worn off. Poor Grace was dead,

we were about to get pinched by the law, and now the damned Serpent wanted to eat us too. I was feeling very depressed.

‘Hurry, hurry, come along,’ Troll cried, and jumped from the end of the pier.

Barong went with her, hand in hand.

Even Ferdy, the most sensible of dogs when it comes to snakes, jumped as well.

The Serpent’s jaws fell open in a truly mind-destroyingly stinky gust of bad fish stench.

‘Oh shit, ‘ Zanna said in despair. ‘We’re not travelling on a Sea Serpent. We’re going for a ride inside it!’

My left arm spasmed in a painful tingle as a guard burst from the bushes, followed by a band of his fellows, all of them armed with Flash Gordon tasers.

‘Beggars can’t be choosers,’ Hugh told us in a deeply disheartened voice. ‘Come on, girls.’ He took us both firmly by the hand, and we jumped into the Serpent’s gaping craw.

## Fifteen

The belly of the whale, where the ancient prophet Jonah whiled away several days before the aquatic mammal conveniently vomited him up at his destination, was nothing compared to this brute.

Probably it didn’t smell that different, though.

We went through its gullet like half a dozen oysters down the throat of a starving man, and the stench nearly killed us. Burning digestive juices didn’t help, either. There were acids and alkali secretions, according to Hugh, the kinds of tasty stuff that get stuck in the back of your throat and up your nose when you barf. Stinging and stinky.

'Fetid,' Barong gasped, after we'd been propelled through at least three sets of massive sphincter muscles in the gigantic creature's gizzards and ended up in a tight barrel of red raw muscle and mucus, sunk to mid-thigh in sloshing sea water. He wrinkled up his nose in disgust, a delicate lad intended for better things by his Grand One.

The reason I could make out his expression, even deep inside a Sea Serpent where the Sun never shines, is because our biological escape module was lined by dozens of pretty little clams that lay open under the yucky water, beaming out a rich blue light.

'Bioluminescence,' Hugh explained gloomily. 'You usually find it in plants that float in the sea. This must be a form of commensalism.'

Certainly the clams were choked with the stuff, and although the light made us all look as if we'd been dead for three days, it was much better than sitting around inside some enormous animal's guts in the pitch black.

'Fetid, eh? That's a classy word for it,' Zanna said, wiping stinging slime from her cheeks. 'It's worse than that durian fruit. I'd call it rank. I'd call it rancid. I'd call it foul. I'd call it—'

'Pipe down, darling,' Hugh told her. Amazingly, she did. Hugh was trying to keep his back-pack out of the pool, which wasn't easy because the Serpent appeared to be lashing along under the cold sea in a kind of undulating full-body wave that threw us from side to side, making us feel even more like throwing up. He managed to get his notepad out, fired it up, keyed for the global positioning data.

Controlled Experiment gasped. In the blue light, aided and abetted by red and green diodes from the feature keys and the color-coded map against its white background on the display, her shaved head looked rather gruesome.

'Is that the world?' she asked, peering at the rotating globe on the screen. I looked too. Good God. Where Los Angeles had been, in fact most of the west coast, I saw finally, untangling the mess before my eyes, obviously had sheared away from the rest of the continent and drifted north. The whole vast, torn landmass was as icy as Alaska had been. No wonder it was cold.

'The one and only,' Zanna told her. Hugh's right hand pecked away, calling up data sidebars. His left hand clutched the machine as he swayed.

'Plate tectonic movement. The San Andreas fault has ripped California in half. Could have happened five hundred million years ago. Maybe the Grand One was playing with the globe's internal heat currents. Okay, gotcha,' he added with satisfaction. 'Well, we are now two point eight kilometers from the city shore, and I don't see any sign of water craft in pursuit. Uh-oh. That trace must be a—' He hit another key, and a small window opened. A few more keystrokes, and the slightly blurry image of a manta ray aircraft was downloaded from one of the ancient satellites.

Urgently, Hugh turned to the lab rat. 'Can you get this beast to dive? Or would that place us in danger from depth pressure?'

'The True Knowledge wonks won't attack us,' Troll said dismissively. 'They don't have the guts. Sneak attacks with mutated viruses, yes. Just straight out violating a geas of the Guy, forget it.' She was peering with some enthusiasm at the pictured globe. Her fingers moved mysteriously, and she seemed to be muttering something rhythmic beneath her breath. I felt the weirdest jolt, and the computer screen shook, went blank for a moment, and refreshed its image. The icon for the Serpent wasn't where it had been an instant earlier; it had jumped an inch across the map, in the direction of the equator. Now Troll looked sick and weak, and slumped into the puky pool.

‘You did that by Goetics? You quantum teleported us?’ Hugh asked, dumbfounded. Simultaneously, Barong said, ‘A high-level symbol transformation in the computational platform. I am impressed.’ He bent to help Controlled Experiment.

‘I thought you hated all this computer stuff,’ Zanna said to him angrily, which I have to say made me quite happy in a rather despicable dog-in-the-manger way. ‘I thought it was all global cosmic minds and Gaia’s holy will, or should I be thinking Son of Grand One?’

Barong regarded her coolly across one muscled shoulder for a moment, then continued his ministrations with the fallen witch girl. ‘We all learn, Zanna.’ After a killing pause, he added without the slightest malicious inflection, ‘Most of us, anyway.’

‘Ouch,’ I said.

‘Can you do that again?’ Hugh asked the lab rat.

‘Not very often, and not for some time,’ Troll said feebly. ‘I’m sorry. But I think that jump should have got us clear of their air machine.’

The map spun, settled. ‘Looks like it. But child, we can’t stay inside this animal for very long. The air here is nearly unbreathable, and it will run out quite soon.’

Troll took some time to answer, pondering. At length, with a frown, she told us, ‘There is another way. I can place us in a state of temporary suspension. Time will seem to pass in an instant.’

‘Oh shit,’ Zanna said in disgust. ‘Same old, same old. Does it involve a furry blue place on the far side of a sheet of lava that can’t possibly be there?’

The lab rat fiddled her thumbs in the gesture that in the True Knowledge Tongue indicated irritated denial. ‘The method is Goetical, and involves a spell. It poses just one danger, but that is a grave one.’

I sighed. ‘You don’t say. And that is?’

‘If the Serpent goes astray without my guidance, we might never be found and awakened.’

‘You mean some doctor at the other end has to give us a shot?’

‘A "shot"?’ she repeated in English. ‘No, a call. A benediction. An awakening.’

‘Cool,’ Zanna said, and leaned back against a pulsing bulge of grisly muscle. ‘They’ll wake us with a kiss.’ She shuddered. ‘I’d rather kiss a frog.’

‘That is one method,’ said Controlled Experiment, in surprise.

Ferdinand was getting rather tired, I saw. The poor old fellow found it hard to hold himself up out of the water. ‘Don’t be ridiculous, we can’t go to sleep,’ I said angrily, scared out my wits again. ‘We’d slither down and drown. Look, the pup’s in trouble already.’

‘We shall be perfectly safe in that regard,’ Troll said. ‘In Goetical suspension, time ceases. We neither breathe nor require food and drink. Our only hazard is assuring our proper awakening, as I have said. But Hugh is correct, the air grows fouler with each minute. Are we agreed? Shall I invoke the spell?’

I don’t remember any further discussion. Everything went dreamy and remote, like sliding into anaesthetic for a minor operation—the drug interferes with your short term memory, so you don’t recall the last numbers you’ve been counting backwards toward.

Out like a soft light.

Awake again, being spewed convulsively from the throat of a barfing Sea Serpent.

‘Oh my God, give me strength—’

Charming way to wake up. At least the weather was a bit warmer, so close to the equator. Not that this is saying a mouthful, since the entire world was locked down into an ice age. Even aided by computational magic, the best that Troll’s folks could manage for a harbor was an indoor pool under glass, the size of a small town and infested with Serpents. Rather like an old-fashioned railroad station, actually, if you got out of the train by being vomited from the carriage door.

‘What we need,’ Zanna said, groaning horribly and wiping slime from her legs, ‘is a long hot shower, followed by a long hot bath, followed by another shower, and then perhaps a massage and some clean clothes and a hearty meal that contains no seafood. That’s what we need.’

‘All can be provided,’ Troll said. ‘We are most civilized here. None of that contemptible Frankenscience.’ She didn’t use that word, of course, but those were the connotations. Unmasked as a Luddite, she was going to let it all hang out, wear her allegiance like a flag of glory. ‘Follow me.’

We weren’t the only ones needing a good cleaning up. The caverns to which Troll took us were full of people washing the slime of travel from their bodies. Huge brass cauldrons of aromatic water simmered over small fires. Icy cascades of water tumbled down from higher up the mountain. By the time we had been doused, scrubbed, boiled, anointed and fitted out in long flowing garments, I believe we all felt we’d been reborn.

Not to mention intensely hungry. In the tavern to which Troll led us, we were served the best full-grain bread I’ve ever tasted, and soup that had nothing to do with the sea.

‘What now?’ Zanna said as we leaned back in our seats, full to the brim. ‘How can we repay you?’

Troll sighed and ran her hand over her bald head. ‘You can all club together and buy me a wig,’ she suggested dryly. ‘The last thing I want now is to look like a lab rat from the Realm of True Knowledge.’ She told Barong, ‘You should let your hair grow longer as well, it would suit you. My own hair, when it grows, is most lustrous.’ She placed a friendly hand on his arm.

I watched Zanna, who was looking at Troll with a hard expression. She might have been prepared to show her gratitude in some mundane way like buying the Troll a wig; she wasn’t remotely interested in surrendering Barong’s affection. And it’s funny—I had been consumed with jealousy for my sister’s growing love interest, but the moment it looked as if Troll were muscling in, I was on Zanna’s side immediately. A disagreeable tension fizzed the air.

Hugh said, ‘Well, tell us, Controlled Experiment—’

The girl broke in angrily. ‘Please don’t call me by that horrid name!’

‘Oh. I’m sorry, dear, it’s the only one I know you by.’

‘My birth-name is Fluent-by-Starlight. Those damned baby-thieves altered it when they made me a Changeling.’

I stared in amazement. I’d been devoted to fairytales when I was a child, and later had studied the topic professionally: Jack Zipes, those cultural analysts, mad Freudians most of them. Zanna and I virtually knew Grimm by heart. ‘You’ve got it the wrong way around,’ I said. ‘It’s the fairy people who steal

human babies and switch them for their own changelings.’

‘What would you know about it, you nerd of True Knowledge?’ Troll caught herself at once and gave me an apologetic smile. ‘Forgive me, Natalie. As you say, you are from a different time and place—you cannot be blamed for misunderstanding.’

‘Changeling or not, if you were raised from the cradle by old Green Frog and her pals,’ Zanna said skeptically, ‘you should love them, not this bunch.’ She waved at the colorful crowd chattering in the tavern.

‘We always remain linked, we enchanter,’ Troll said. ‘Nothing merely scientific can sever that deep bond.’ She looked intently at Barong. ‘You will understand this, Barong. I sense your aura, your links to Guy. You are a very powerful vortex.’

‘Well, Fluent-by-Starlight,’ Hugh said, made characteristically uncomfortable by this flux of love and hatred, ‘who’s in charge around here, and when do we meet her?’

‘Oh.’ Troll made a vague gesture of dismissal. ‘Really, no one is in charge. We are a democratic people, each with her or his special gifts and role to play in the Great Game of the World under Guy.’ Taking care not to give offense by pointing, she drew our attention to the people around us. ‘That girl is a water undine.’ A scrawny child was pouring a customer sparkling drink from a jar too heavy for her. ‘The young fellow is a fire-brand.’ He sat beside the hot fire, pumping his lungs like a bellows, so the flames leaped. It looked quite exhausting to me, not a job I’d cherish. ‘A song-bird sprite.’ That one was a fat woman with a smile and a mouthful of felafel. Above her head, a golden or brass bird was spinning in a cage, lilted a sort of jolly folk-song music from its metal throat.

‘These are the lower classes, of course,’ Troll told us, shrugging. Clearly she was made of finer stuff, but with any luck they’d let us in the castle door in her train. ‘The nation possesses a whole order of warlock artisans, birth witches, flower children, rising through the ranks of power to various grades of wizards and grand wizards and high priests and priestesses and a few very scholarly shamans. But no one is literally in command of the whole place, not even the High Magus. Nothing at all like that appalling hierarchical Realm of True Knowledge.’

‘Yes, yes, so whom do we see?’ Hugh put down his tankard, wiped his mouth on the back of one hairy forearm. He’d removed the rather soiled bandage after our disgusting ride inside the Serpent, and it looked as if his bullet crease wound was pretty much healed. ‘To whom do we offer our services?’

If you were listening for it, you could hear the disappointment in Hugh’s voice. Back in the Realm of True Knowledge he had been royally received and taken directly to see the head personage, leathery old Méthode Scientifique herself. He’d received the respect his profession deserved—even if he had been asked to perform a hideously unethical act. In this place of Goetics, he probably had no status at all. Worse, he might find himself anathema.

‘Oh,’ said Troll, ‘I’ve got a few friends who might be interested in meeting you. I’m sure they’ll be fascinated to talk to Barong and Ferdy.’

‘Barong and Ferdy?’ Hugh was rather put out to be left off the list.

‘Well yes,’ Troll said and again she placed a companionable hand on Barong’s arm. ‘I sense something very special about Barong, he is in tune with many orders of mind and zeitgeist—I could scry that the moment I met him.’ She smiled sweetly.

‘Zeitgeist my ass,’ Zanna said.

‘In his own lost and ancient epoch, as he has told me, Barong was part of the Grand One. In our age he may become the embodiment of that holistic spirit which drives our community.’ Her eyes gleamed. ‘Indeed, we have a legend that foretells the coming of a golden-skinned, black-haired, all-seeing one, and his four-footed familiar.’

‘Drivel,’ Zanna said. ‘You’re making it up on the spot.’ She actually stamped her foot. ‘Give me a break!’

‘Uh... Zanna, that was hardly polite,’ Hugh told her, but you could tell he agreed completely with his younger, smarter and more attractive daughter’s analysis. Much good it seemed to be doing her.

‘Look, Troll,’ she said, leaning across the table to confront the bald girl, ‘Barong here is a good fellow, but he is not some sort of mini-god. And Ferdy is my dog—he’s the family pet, he’s not a familiar, you witch.’

‘You must realize, Zanna,’ Troll said demurely, eyes cast aside, ‘that Barong and Ferdy understand each other in a way none of us can even dream of.’

‘You must realize, Troll,’ Zanna said, not at all demurely, ‘that hundreds of millennia before you were even born, some crackpot computer entity shoved a brain implant into poor Ferdy. Barong’s got one as well. There’s nothing Goetic about it. Is there, Barong?’

‘Ah...’ He spread his hands in a gesture of universal friendship. ‘One mehum’s goetics is another mehum’s science.’

‘Look, buddy boy,’ Zanna said, ‘quit being so diplomatic. Just tell our friend here that you are not interested in becoming the Prince of Snake-oil just so that she can become the Princess.’

But he said nothing, inspecting his hands where they lay limply on the table. Zanna glared at him; he declined to meet her eye. She turned her hot gaze again to Troll. ‘And I’ll tell you another thing, Ferdy has no intention of becoming a lap dog at the court of Mumbo Jumbo.’ Zanna bent down and patted the old pup under the table. ‘No, he doesn’t, he’s my dog.’ Her eyes narrowed. ‘I don’t suppose your creepy ancient legend mentions a tough young woman with a cross-bow? You know... the destined consort of the golden-skinned one.’

I gasped. Pretty blatant. If these girls had been in one of those sandal epic movies where people whack at each other with swords, they’d be slamming down their metal-studded gloves on the floor and calling for seconds to attend a duel at first dawn. Oddly, though, Zanna’s nasty shot had an interesting effect on Fluent-by-Starlight, although I might have been the only one to notice it. Her eyes flickered briefly, her mouth tensed, and then she looked away, as if searching the room for a more reliable sidekick.

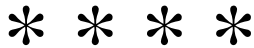
‘There is no such legend,’ she said, voice slightly tight. ‘Just the Young Magus and his wet-nosed familiar.’

‘Crap,’ Zanna said, leaning back and peeling something like a pineapple the size of an orange, using a sharp knife she drew from her right boot. Downright lethal these days, my young sister Zanna. ‘You’ve made it all up on the spot. Well, if you can invent a legend, so can I. See, in my story, this terrific-looking warrior girl from a mysterious time warp arrives in Boring City and—’

I had to step in pronto, smooth things over; we were indebted to Troll and she was our only contact in this strange place. ‘Look, guys,’ I said. ‘Everyone’s getting tired and cranky. What we need now is somewhere to sleep. I’m sure we can work things out in the morning.’

‘Of course,’ said Troll, shrugging, and shot me a warm smile. ‘I’ve already arranged accommodation in this tavern. We need only go upstairs.’

The beds in the tavern, it turned out, weren’t nearly as comfortable as those in the Realm of True Knowledge. The mattresses were filled with straw—but they were a great improvement on the insides of a fishy Serpent. We slept like logs.



In the morning Zanna and I woke up before the others, and took a walk around the town, munching on purple apple-things. Genetically engineered foods? I no longer cared, enough time had elapsed that surely the bugs would have been worked out. Anyway, I decided, my own DNA was made of sterner stuff. And our home away from home was a pretty place, the people were friendly, the buildings were quirky with a dozen different architectural styles in any one street. A gingerbread house nestled up to a small Gothic castle with turrets. Next door was a place like a pagoda made of heavy paper encrusted with thousands of mysterious glyphs. Maybe they were ads. Across the street stood a house made entirely from the trunks of petrified trees.

‘Check it out.’ I pointed at an authentic vampires’ mansion with a belfry where huge bat things were flitting home after a night out. Zanna wasn’t interested in architecture. She was interested only in blackening the name and character of Controlled Experiment or whatever she called herself now.

‘I don’t trust her, Nat. She was a spy in the Realms of True Knowledge. She’s got her own little scam going here. Claims she was a changeling but seems to have no affection at all for the people who brought her up. She might be a double agent, a triple agent, she might be an agent to the power of x.’

‘Yeah, and she rather likes Barong,’ I said. ‘I don’t imagine that has anything to do with your suspicions?’

‘That boy is a total innocent. If anybody needs protecting, he does. Did you see her last night—clawing his arm with her talons, fluttering her eyelashes, crooning at him.’

‘She’s got rather pretty hands,’ I said. ‘I wouldn’t call them talons.’

‘Whose side are you on, Nat?’

‘Yours, of course. Ours. Just calm down.’

‘I am calm,’ Zanna said. ‘We’ve just got to work out what we are going to do when little Miss Muffett tries to turn poor Barong into a puppet god.’

‘Maybe Barong wants to be a puppet god.’

‘If he does, he’s crazy. He’d have to spend half his life dressed up like a Christmas tree chanting idiot spells and consulting hens’ gizzards.’

I couldn’t help laughing.

‘That is what they do, you know,’ Zanna said hotly. ‘Divination. They predict the future by manhandling some terrified bird and ripping its guts out and reading them. I mean, what sort of civilization uses bird guts as a newspaper?’



"Augury" is the word you're looking for. A very traditional form of semiotics. We don't know that they do that here.'

'You mean "auspication".'

'No, I don't. That's finding omens in the flight of birds. Hens don't fly terrible effectively after you've ripped their guts out.'

'Don't quibble. They're heavily into Goetics, probably the black kind. Of course they carry on like that. If it's not fowl guts—'

'All guts are foul.'

'...it's ectoplasm, you fool, and rapping on tables and talking in tongues, and drinking the blood of innocent babies and drawing pentagrams and summoning up Satanic forces and chanting Fee fi fo fum...'

'All your base,' I shouted, 'are belong to us!'

By this stage we were both falling about in the open street, laughing our heads off. As sometimes happens when there's too much tension in the air, one spasm of mirth set off another. It took us several minutes to get ourselves under control; passers-by in the street stopped and stared.

'Come on,' I said to Zanna, 'We'd better get back to the tavern before we're arrested and flung in the stocks for public giggling.'

'Yeah, well, just watch that Troll bitch,' Zanna said. 'Watch her like a hawk, and if she gives you any strange potions to drink....'

'I'll pour mine into the nearest potted plant,' I assured her.

'It'll wither up on the spot and keel over,' Zanna said, relishing her own gloom.



Later that day, Troll took us to meet a group of her friends. We walked for a mile or two along the cool sea front. Beyond a broad but beachless promenade, the sea broke lazily against rocks. Occasionally we saw a Serpent surfacing and making its way in great rippling surges to the disembarkation point.

'How are we going to talk to your friends?' I asked Troll. 'We don't know your language. Or do I mean dialect? Parole? Patois?'

'Oh, they are all fluent in True Knowledge Speech,' Troll said. 'It helps to know the language of your enemy. Although, mind you, they had to learn it the hard way. We've got no scanning machines here.'

'Couldn't you have used a spell?' Zanna asked, peering past Barong, and I was impressed at the way she kept her voice neutral. Good girl. Calm, calm.

'Even with Goetics, there are certain things one cannot do,' Troll said. 'Goetics is a hard task-master, not a universal servant.'

'Tell that to the poor fucking chickens,' Zanna said, last two words in English.

'What?' Troll was baffled. Her command of English—her lexicon, grammar and tacit encyclopedia, so to

speak—was from Hugh, and he’s a bit more high-toned than Zanna and I.

‘Never mind,’ said Zanna and put her arm firmly round Barong’s waist. For a moment we all walked in silence. I looked sideways at him; I couldn’t tell if he welcomed Zanna’s possessive gesture or not. Troll was working hard at being inscrutable—and succeeding. Well, she would, of course, I told myself. It’s an occupational skill among professional spies.

‘In here,’ she said finally, and turned to rap on a thick wooden door set into a high stone wall.

## Sixteen

I’d been expecting something along the lines of a coven, with a five-pointed star drawn in reeking blood, and smoky candles, lots of wicker and lewd silver amulets and bad art painted on black velvet. The room we entered gave me quite a surprise. It was neat, efficiently laid-out, and the people gathered in a half-circle looked like the wizardly equivalent of the local

# chamber of commerce.

‘Welcome, Fluent-by-Starlight,’ said a handsome man in his sixties. He was wearing what looked like a fairyland version of a business suit, vaguely medieval in rich port-wine linen and a neat ruff under his chin. ‘And these must be our unusual visitors.’

Rising, he strode toward us with both arms outstretched. ‘Welcome to you all as well, and thanks to you for returning our beloved exile home.’ He embraced my startled father in a firm hug, and then did the same to Barong, before touching each of us women, and Ferdy, with one paternalistic pat to the top of each head. ‘I am Babel’s Architect, your host in this gathering.’

Luckily, he was speaking the language of his enemies, so at least we could understand him. In his mouth it was far more flowery than the strangled blather we’d heard from the *Méthode Scientifique*.

My father did the usual polite song and dance in return, I nodded without saying anything, Barong orated some drivel about the loving spirit of Guy, and Zanna plopped herself down in a comfortable leather chair and crossed her legs. ‘Nice place, Babes,’ she said insolently. ‘Are you any relation to the Troll here?’

Fluent flushed. ‘Suzanna, please. You are addressing a notable adviser of the High Magus.’

‘Yeah? I thought you were all terrifically democratic and libertarian and agoric and no bosses and everything.’

With considerable composure, the man calling himself Babel’s Architect touched Troll’s bald head again, soothing her... and it worked—as if, I couldn’t help thinking, by magic.

‘I understand, my dear,’ he said, unruffled. It wasn’t clear if he were speaking to Troll or Zanna. ‘The customs of one time and place are not those of another. But please, won’t you all sit? We shall have refreshments, and then discuss the matters at hand.’

I cheered up at that. Breakfast had been at least two hours earlier, and I was getting peckish. As two of the young men did some spell-casting and muttering, a large wicker basket in the center of a glass table popped open and a warm-bread-smelling feast rose into view, complete with flasks of fruit juice and some implausible artichokes that tasted like boiled eggs dipped in savory sauce, stuff like that. I hoed in, getting myself sticky and putting a happy smile on my face. Zanna, I noticed, ate very lightly. She sent me a warning look and shook her head almost imperceptibly, but I ignored her paranoia. If these dudes wanted to harm us, they could just as easily turn us into bats.

The apprentices, once we were done, made the leavings vanish, which beat washing up, and the Babel man led the rest of the company in a combined debriefing of their spy plus invitation to Hugh to turn the tables on the evil forces of True Knowledge. Obviously Troll had been channeling most of this material to them in dribs and drabs over the years, via some enchanted pipeline, but she rose to sum up the current state of play with scary brevity.

‘My dear Brothers and Sisters, the so-called *Méthode Scientifique* has masterminded a research program to develop a sickness that will infect our people with what they call rationality,’ she told the horrified coven. ‘This illness, this plague, affects the very structure of the brain. My fellow lab rats are convinced that it damages the right side of the brain, where the power of Goetics resides, and enhances the dreary authority of the brain’s left hemisphere.’

I raised my hand. Troll frowned, but inclined her head to allow me to interrupt.

‘I thought the left half of the brain has something to do with language,’ I said.

‘Yes, but it is the narrow language of logic,’ Babel’s Architect said. ‘The bitter logic of the so-called scientists and their false knowledge.’

‘Funny,’ said Zanna lazily, swinging her leg, ‘that’s exactly the sort of thing they say about you.’

‘Without precise language,’ Hugh added, clearly uncomfortable at all this dissing of his beloved science, ‘we are hardly better than the animals.’

Ferdinand barked loudly, gruff, then rested his nose on his paws.

‘Sorry, Ferdy,’ Hugh said. ‘No offence intended.’

Ferds barked again, and wagged his stump. Okay, none taken. I didn’t know which brain hemisphere he used to say it.

A brisk young woman from the coven said, ‘How can we be certain that these visitors of ours have not already been used to smuggle in the memetic virus, exactly as the evil old creature intended?’

‘There is no virus here,’ Barong told her. He sat in a zazen posture beside the glass table, relaxed but alert. You couldn’t help trusting him completely, without reservation. Legend or not, he did make a pretty convincing young hero. Troll and Zanna both watched him with their tongues all but hanging out. Danger, danger, I thought queasily. One way or another, there was bound to be a woman scorned by the close of play. Then the sparks and the fur would fly. I’d prefer to be elsewhere when that happened.

Babel asked, ‘Your special gifts allow you to say this with certainty?’

‘My implants and enhancements, yes. And my bond with my friend Ferdinand, here, who has a nose for danger.’

Again, the good dog wagged the stump of his tail, his eyes bright with intelligence and cyber-linked understanding.

‘That is good to know,’ Babel remarked with considerable satisfaction. He sat back, crossed his hands over his small pot-belly. ‘Our enemy is confounded. Yet she will not remain so for long. We must seize this opportunity while the cast of fortune remains fair for our cause.’

‘The High Magus will not permit us to move against the Realm,’ a thin-faced fellow said in a reedy voice. I recognized the type, and could foresee him ducking behind a tree at the first sign of trouble. Maybe I misjudged him, though. I’ve been wrong about people before.

‘If so, we must replace the High Magus,’ Troll cried in a fierce, passionate voice. Then she blushed, and covered her eyes with her lashes, which were long and lovely, you had to admit. With her hair grown back in she’d be tough competition for Zanna. Not that Barong seemed to object to her current looks; he was probably used to a lot weirder sights than a beautiful lab rat with no hair. It annoyed me that our helter-skeltering of the past few days had got in the way of talking to the dear lad, finding out more about his experiences during the Spike. I knew only that he’d been fetched to the States from Indonesia because he possessed natural immunity to the Manila plague virus, and the medicos needed to examine him in their bio-containment labs. Or perhaps, as I suspected in darker moments, the virus was indeed engineered by terrorists or somebody’s military—maybe even our own, God forbid—and either had escaped or been released to wreak havoc on an enemy. If so, Barong and his companions of the Grand One were probably a small colony of lab rats in their turn, survivors of an unthinkable experiment that had gone, as the cliché put it only too accurately, horribly wrong.

Smoothly, Babel's Architect was murmuring, 'I am sure that our impetuous young Changeling ally means no treason. The High Magus is a blessing upon our nation, old and somewhat absent-minded as he may have grown in his advanced years, may they be many.'

Rhubarb, rhubarb, muttered the other witches, maintaining their pious looks while presumably harboring every intention of pushing the old goat off the throne first chance they got, I was quite sure of that. I'd witnessed enough faculty seminars during my graduate studies to know this sorry scene well. If the meeting had been taking place in the Realm of True Knowledge, admittedly, they'd all have been clapped in irons by this point, since the household surveillance system would have picked up every word and reported it to the thought police. Here, with spells to protect a secret gathering like this one, you could say what you liked without fear of being apprehended.

D'oh! Maybe not.

I was rocked back in my seat by a terribly loud bang. Light bright as the Sun flashed in the middle of the room. When my teary sight returned, an old geezer stood where the glass table had been. He held a tall staff tipped with a hard blue piercing light, and wore nothing more than a strip of grubby fabric wound around his ancient loins.

'You vex me, my son,' he told Babel, who was doing his best to look dignified. 'Always the plots. Always the dull little cabals. Why can't you come to the front office and put your recommendations to the central committee like everyone else?'

'Sire,' Babel started. He stopped to clear his throat. 'High Magus, perhaps you have been misinformed of the—'

'Oh, don't beat around the bush, Babel,' the old boy said. 'You want me gone, half the enchanted realm wants me gone, and one of these days I will be gone. But not yet!'

Turning slowly, with remarkable presence (I thought of Kirk Douglas at a major awards ceremony before his stroke), the old fellow achieved eye contact with everyone in the room. When it was my turn, I looked back as steadily but guilelessly as possible. The High Magus's own stare wasn't hostile, indeed it seemed quite friendly, but I suspected there was little in my mind he wasn't seeing.

'Well,' he said at last, 'it seems my successor has come amongst us at last. As legend foretold. Welcome, young man.' He inclined his head slowly towards Barong, who inclined his own head equally majestically in reply. 'And, as legend has also foretold, we are graced by the presence of his consort and bride-to-be, the maiden of the cross-bow.' He inclined his head towards Zanna.

Troll snorted incredulously, like an offended horse. 'Her?'

Zanna ignored Troll. Without leaving her chair, she said to the old man, 'Listen, Old and Ancient One, I thank you for the offer of the job and I will give you an answer in due course. However, there are a number of non-negotiable clauses that will have to be written into the contract. One: there's to be none of this consort nonsense—if Barong and me are going to run this joint, it will be an equal partnership. I get full voting rights—'

'It is not customary—' the Magus began.

'Custom is the last refuge of the sleazebag,' Zanna said.

'I'm sorry, I am unacquainted with the concept of the sleazebag.'

'Don't worry about it for the moment,' Zanna said. 'Two: there's to be no cruelty, no sacrifices, no

ripping the guts out of chickens.’

‘I assume you refer to the ancient and lamentably indirect practice of divination using bird entrails?’

‘That sort of thing.’

‘I assure you we have more semiotically sophisticated ways of predicting the unexpected.’

‘Whatever, but terrific.’

Barong said, ‘We are of one mind on that question.’

‘Three: about my family. I want them given proper jobs. I’m not having my sister sculling around the palace with nothing to do. She’s an intelligent woman and can be expected to pull her weight. As for my father—we have a major-league problem. Hugh is a scientist. Always has been, always will be. And pretty damned snappy at it. In fact, he’s the one who invented the spacetime vacuole.’

A sudden collective gasp, a quick indrawing of breath by everyone present.

‘Yeah, that’s right,’ Zanna said, ‘a scientist. But I’m not having him persecuted on account of it. Got that? He’s to be given his own lab.’

‘The girl’s a scientist herself,’ screamed Troll. ‘Just listen to her! She is not the foretold one. She’s false, false, false. I am the promised consort. I have no problems with that role. I will serve my lord Barong in true maidenly modesty.’

‘Pigshit!’ Zanna said with a coarse, derisory laugh. ‘You’ve got no hair at all and you’d manipulate poor old Barong into an early grave. You might pretend to be his loyal little helper, but you’d twist and mould him like pizza dough.’

‘Ladies!’ thundered the Magus.

Too late for the argument from authority. Troll was already weaving her hands and muttering her spells. Green light began to flicker around her fingers. I really didn’t like the way she was glaring at Zanna. My sister looked around for something to defend herself with. Others present were speaking in short bursts of verse, weaving spells. The Architect of Babel was busy hauling little leather purses of powder from the recesses of his garments. He flung the contents of one in Troll’s direction, but she raised her green flickering hands and the dust scattered before it reached her.

‘This is unseemly. Unseemly, do you hear?’

The old man’s words were lost in the melee. Things were getting entirely out of hand. Everyone in the room—and there now appeared to be more of them than I’d noticed at the start, even though the doors remained shut—was making Goetic passes, fast and furious. Huge bats with heads like slaving wolves materialized in the air. One unfortunate young man disappeared with a stricken cry. The air imploded to fill the space he’d occupied, reminding me of the 6-brane vacuole. A young woman was sucked into the same void only to collide with a balding gent coming from the other side holding a steaming cooking tureen, a shocked expression on his neatly bearded face. A speckled lizard that hadn’t been there two seconds before burst into flame and ran around the room setting fire to drapes and curtains. Hugh and I began furtively to shuffle backwards towards the door. Barong, however, continued to sit impassively in his zazen posture—wholly unperturbed by the madness surrounding him.

‘Finish the old bastard off,’ yelled Babel. ‘Now’s our chance.’ Muttering incantations, he hurled symbolic powders at the Magus, sprays of brown and yellow and bright red that made me sneeze even on the

other side of the room.

Troll had summoned up enough green light to send a fireball toward Zanna, but my quick sister lurched sideways, drawing her knife from her boot. 'Barong, you dimwit,' she yelled. 'Don't just sit there, do something!'

As if on command, Barong slowly rose from the floor, still cross-legged in the zazen position. I boggled. I've never seen anyone levitate before, except David Copperfield and while that was just a highly expensive illusion it did make me cry a bit because it was so beautiful. I've always wanted to fly.

'Oh, very impressive, well played, sir,' yelled Troll, admiringly I think. 'Now chose me. Cast your lot. Let the foretelling be made manifest. Be seen to choose, and choose rightly...'

'Shut up, witch-bitch,' Zanna yelled. She seemed to be regressing to the kindergarten, if they're allowed to carry lethal blades at that age. 'Barong and me are an item. Get it? An item.'

The flaming salamander lizard had sprouted wings, making low passes across the heads of the rioters; small fires started everywhere it brushed. The timber walls themselves were beginning to burn. Ferdinand jumped up and down on the polished floor-boards, barking like mad and trying to reach the impassive Barong who was now floating at head height. Someone stumbled and tripped over Ferdy: it was the ancient Magus, who fell with a horrid raw-boned crash and lay flat out on the floor, unmoving. His face turned an alarming purple.

'Heart attack,' Hugh muttered beside me. He cupped his mouth and yelled like a coach, 'Suzanna, Ferdy, over here, we've got to get away before the whole place goes up.'

The good old pup ceased his mad leaping and scuttled over to join us by the door. Zanna stood where she was, four-square and joyous with the spirit of the fight, knife menacingly in her right hand, yelling at Barong, 'Wake up, golden boy! Get out of the air, the joint's going up in flames.'

In a slow lordly gesture, Barong extended one hand towards Zanna. She, too, left the floor, floating upward in much the way a summer leaf drifts downward. Several of the rioters stopped their rioting and spell-casting and stood back in awe.

'He has chosen, the chosen one has chosen,' the thin-faced man yelled rather incoherently, but you could tell he was pleased.

'You're going the wrong way, smoke inhalation is worse at ceiling level,' Hugh yelled. 'Get down onto the floor!'

But Zanna, with strange aplomb, just tucked her legs into the zazen position as well and floated across to join Barong in the fumes and light and smoke. Terrible green light crackled and flashed and Troll screamed, 'You'll never get away with it! I'll fix your flesh-and-blood.' A great roiling ball of light and smoke spun from her fingers and grew as it hurtled across the room to where Hugh and Ferdy and I stood ready to make a dash. It engulfed us. We made no dash.

Everything went dreamy and remote again, like the last time in the belly of the Sea Serpent.

Something in me clung to consciousness, fighting against the fall into timelessness.

It felt like Grace. Oh, Mom. My aching heart.

And yet the room locked up. The flames froze. No, gone, they were gone entirely. Everyone blurred, like an insanely speeded-up DVD. Where the fire damage had been, the walls and ceiling were restored. I

don't mean workers came in and fixed the place up, and I don't mean time ran backwards to make everything the way it had been. Actually, I don't know what I mean, exactly. I suppose what happened was that Hugh and Ferdy and I got stuck inside a single long moment of time, stuck there by Controlled Experiment's spell, while all the rest of the world ticked away at the standard rate. It was creepy as hell, because this time, unlike the vacuole, I was somehow aware of what was going on and altogether unable to do anything about it.

What was going on was this: a ghost-dog barking and barking with terrible joy, and Daddy having a long, thoughtful conversation with Mommy.

Obviously that was impossible. Clearly I'd hit my head, fallen down during the melee, breathed too much smoke. Because if there was one thing I knew, something that had been driven into my broken heart by nights of weeping, it was that my mother was gone, was lost to us nearly six hundred and ninety thousand years in the past.

'Not really, darling,' her sweet voice told me. 'I'll never leave you. I never have.'

In that timeless moment, so unlike the head-splitting green flash future-jump of the vacuole, I sobbed again with happiness to find her there, if only for a moment.

'Is it really you?' I recognized her scent, no, her smell, distinctive and human, womanly; the touch of her face against my cheek, the echo of her darling voice. 'I'm imagining this, aren't I?'

'I'm here,' she assured me, and I felt the pressure of her kiss. But when I reached out to hug her, I couldn't find her, couldn't move my arms, couldn't—

## Seventeen

It sounded like a distant crowd chattering, but it wasn't. I tried to catch my breath amid the racket of clattering. Click-clack, tick-tock. A red haired man bent over the open works on his table, loupe in his eye, tiny delicate



screwdriver in his hairy, steady hand. On a dozen shelves, and in the store window, hundreds of clocks and watches danced away the seconds. His red hair was cut very close to his skull, an orange-pink fuzz. Maybe he was in his early thirties. The insides of the clock gleamed, brilliant brass and steel. Nothing electrical here, no quartz to replace the coiled spring. I knew him from somewhere; I felt surreally calm.

‘An horologist,’ I said conversationally, to be polite.

‘Call me Horace,’ he said, glancing up, light dazzling briefly from the lens clamped in his left eye.

‘Horace?’ I said, and laughed. Surely that wasn’t his name. ‘Sorry, that’s rude. Calling a boy "Horace" is a source of innocent merriment these days.’ A little tune twinkled on my tongue, duh-da, duh-dada, duh-DA. Did I know it? Something Hugh used to hum. Gilbert and Sullivan maybe. ‘Most of us never learned classic Latin verse,’ I explained apologetically. ‘Or was Horace a Greek? Not my field, I’m a cultural theorist and we tend to avoid the pissy little details.’

'Horus,' he said more clearly.

Not Roman or Greek, then. Was it Egyptian? That long beaky face, like a bird of prey. Not quite at the same moment, all the clocks jarringly started to chime, peal, ring, toll, clang, buzz, even the opened timepiece he was repairing.

'I get it,' I said wearily. I leaned back against a display case. 'It was badly broken, and you've fixed it.'

He glanced up again, looked along that sharp nose. 'You've been reading too much Philip K. Dick.' He laughed, but the sound of his mirth arrived in a white balloon above his head, with a little curving thorn projecting from it toward his mouth:

HA! HA! HA! HA!

I was confused. 'Dick? The postmodern fabulist? Fredric Jameson was always going on about him, wasn't he?'

'Postmodern, schmostmodern,' Horus jibed. 'Wrong p-word,' he said, closing the back of the healed clock and setting it upright. He buffed its glass with a polishing cloth. 'P-for-paranoid, you mean. FUD. Fear, uncertainty, and doubt.'

I was sick of this by now. I poked out my tongue and told him, 'You're a mythical beast. Go away, please.'

'Not so quick, missy.' He threw off his jacket, unfurled his great pinions. In the growing darkness, the clocks ticked loudly, and I felt on my face the wind of wings beating. The turbulent air shook the plate windows, and cracks crazed through the glass. I squeezed my eyes shut and heard the shards fall, smashing on concrete pavement. People were laughing in the street as they passed, and a siren bleated.

'We can deconstruct you,' Horus said, and began to unscrew the back of my skull. Very faintly, I seemed to hear little Suzanna calling from her room: 'Mommy, Mommy, I had a bad dream.' My father was singing about pirates. Always surprised me that he had such a good voice.

'Over this way,' Hugh called. 'You're losing her,' someone said, infinitely distant, clear as a bird call in the very early hours of sleeplessness. 'The faster you live, Natalie,' my third grade teacher, Mrs. Gardner, insisted, 'the smaller you must be. Or maybe that's vice versa. In any case, the smarter you get the less you need to travel. It's all inside here.' She tapped the side of her own head, settling comfortably into her armchair. 'Would you care for a cup of tea? Not tea bags, you stupid child; boiling water poured over loose Earl Grey leaves, in a pot warmed first with a dash of the same hot fluid.' I had always hated her. Musty smells came up from her clothing, from her very body. Mrs. Gardner was old. Perhaps she would die soon. Her flesh was crepey, her throat wattled, her breath too sweet but secretly foul under the candy-sucked sweetness. She patted my head as I drew a big shaky picture of my house and garden with thick, reluctant crayons, my tongue stuck out the side of my mouth. 'Too much purple,' she told me, snatching away the heavy sheet of paper and screwing it up. 'Too much amethyst.'

'I remember now,' I shrieked. 'Horus the god. Moon in his left eye, Sun in his right.' I gritted my teeth. 'I can tell a symbol from a handsaw when the wind is in the right quadrant, fuck you.'

I struggled away from sloshing, stinking fluids. Was I being born? Serpent guts. Perhaps this was corruption, the agony of time.

'Now there is a god,' said the bird, stooping.

'Tell me, tell me, tell me,' I screamed at the top of my voice, hurting my throat. All I felt was rage. How

dare they do this to me? To us? I looked through the darkening air for Hugh, for Zanna, for flying Barong who somehow had patched his will into the fundamental digital coding of reality and rewritten the local laws of physics, if only for a moment.

Huh? Digital physics? And where had that notion come from?

‘From the notions store,’ a fat man said, running past, heavy feet crushing the broken glass, making a terrible brittle din. A dog ran with him, barking.

‘I can only explain as much as you can tolerate, take in, cope with,’ the watchmaker said. Maybe I did know him; he was hauntingly familiar. ‘Certainly you should understand the virtues and limitations of allegory. Isn’t that your training?’

‘Christ, yes. Figuration and fable, metonymy and metaphor. Doesn’t get you far in the real world, buddy. Doesn’t shift a run-down apartment building that’s been vandalized by brutes using it as a crack house, no, you won’t get far in real estate with a command of allegory.’

Words scrawled themselves in brilliantly luminous red across the wall, which was already a mess of torn pasted-up old movie posters, obsolete political slogans, handwritten pleas for news of lost dogs (Golden retriever bitch, 3 yrs old, very loving, answers to the name of Betsy):

Again you evade the true nature of reality.

‘So you say.’ I sat down again in the shadows, dejected, hungry, unbearably lonely. How long had I been in this cell? Could nobody hear my shouts? In fact, I could barely get a whisper out. Maybe I’d caught a cold, or perhaps this thickness in my swollen head, my poor stuffed nose, my itching, runny eyes could be a seasonal allergy. The sting of time again, then. Of course. How banal.

Horace was calling my name distantly, down a long black tunnel. It frightened me to enter it, terrified me to walk its length. At my back, footsteps. Throat dry, I increased my pace. My head ached, and I wanted to sneeze. The footsteps grew closer. I started to run. There was a patch of light ahead. My chest was bursting with pain.

‘Sorry, we can’t give you a proper explanation,’ Horus told me, pulling me into a big black Cadillac and driving fast along the edge of the oily, light-streaked river. ‘It’s worse than sleep. You’re not even dreaming, Natalie. Your mind’s modules are disconnected, misfiring, sluggish, lost luggage. Thing a on attention your keep can’t you.’ He took his hands from the wheel and wrung them piteously. ‘Please try, girl. We want you to unner unner udder stand.’

‘What?’

‘Oh shit. Let’s go to the movies, subvert the dominant paradigm.’

It was wonderful, a boisterous, romantically lush, pulse-quickening John Williams score. Or maybe James Horner, with that skinny woman singing. Space shuttles lifted in burning white steam to orbit, brave men and women in EVA suits grew the space station like a vast toy. Heavy lifters roared and thundered. A passing asteroid was captured, mined, its wealth flung back to Earth. Technology accelerated: miniaturized robots, spiderlike, scurried to tear apart metal and plastic, rebuild old waste into gleaming towers and jewelry for the white-teethed, laughing women of utopia and their bold star-faring men.

‘What?’ Whose mad hope of history was this? The flood rushed over me, the movie roared, trumpets and violins.

Molecular machines swarmed, hurled into heaven from long mountain ridge electromagnetic catapults,

caught moons, whole worlds, tore them down for raw material, built outward from seeds in the weightless vacuum of space, scaffolding structures great as planets, greater still. Immense shells of diamond and sapphire spun like gleaming webs about the white fire of the Sun. With never a pause, construction continued. Hurling on light-wings into the stellar spaces, self-repairing machines no larger than bacteria reached for the nearest suns and their dead worlds, caught the new planets and stripped them in months or years, rebuilt them into lacy palaces for the colonists racing at very nearly the speed of light to find their new homes waiting under alien suns. Strong men laughed, beautiful women pouted and simpered, their tanned, chocolate, golden children were heartbreaking and cute. Star after star winked out, enclosed by the energy-sucking shells of these ultimate skyscrapers, these glorious—

With a screech, the feed pool seized up. White light glared on the screen. The long black tongue of the torn reel leaped from the sprockets, fell, coiled and toppled in piles on the dusty floor. Horus capered, flinging gasoline on the piled film stock, tossed in a lighted match. The movie went up in a stench of black smoke and greedy blue flame.

‘Bullshit, the whole stupid thing,’ he told me. I pressed my back to the wall, watching dreams burn. ‘None of that happened. Caveman fantasies. Meh. Mind candy.’

‘Then what?’ I said, putting the knuckles of my right hand between my teeth. ‘Just tell me.’

‘Can’t. Illogical, captain.’ In a smelly bearskin, he brandished a primitive spear. On the far side of the fire, tired folks with long matted hair ate half-raw meat hacked with flint and torn with worn teeth. Grubby children scampered, or snoozed at their mothers’ shameless breasts. ‘Ask these guys about their plans to go short on the market, analyze Brecht for four years, plough superphosphate into the soil, inject their muscles with dead bacteria. The future took a different path, child.’

‘My future? I know that.’

‘They went very, very small,’ Horus said, pushing a heavy armchair across to me. ‘They went very, very fast. You don’t build galactic empires that way, Natalie. Mind colonized the nano-world, and that’s an immensely large New World. Its spaces are so very large. Eternity in a grain of sand.’

‘The clocks,’ I said, with that slipping sense of almost getting it, nearly having the idea in my grasp, as it slid—

‘The dark between the stars is so very large.’ He shrugged, gnawing on a smelly bone. ‘When your uploaded mind accelerates to Spiked speeds, a voyage to the planets takes subjective millennia. To a nearby star, it’s millions of years, even at light-speed. Plus no messages from home, no updates, since radiation labors after you at the same speed.’

‘What, you don’t have faster than light transport yet? How reactionary. How... incompetent. Jean-Luc Picard would be ashamed of you.’

I was standing in a vast spiderweb tessellation, glistening lines running to infinity above, below, right to left, behind me and at my front. Everywhere that the three-ply threads of the web crossed, a tiny cube was marked out.

‘Voxels,’ said Horus mysteriously. It sounded like something Hugh would say, or perhaps Grace.

‘Uh-huh.’

They flickered on and off, crimson and viridian, gold and black, like some demented computer display for the terminally minimalist. I noticed, with a sick lurch, that I was being moved as well, flipped from one

infinitesimal cube to another in gut-wrenching instantaneous leaps.

‘Digits and bits,’ Horus said. ‘It’s the flip side.’

Music played from a jukebox I couldn’t see, some scratchy sample rap jive that put my teeth on edge; I can’t stand that boring old stuff. ‘Flip side of what?’

‘Dual paradigm, but I won’t try to explain—’

‘I know what a paradigm is,’ I said. ‘I taught cultural relativism as a T.A. for a year, and it bored me rigid. You don’t have to sell me on the idea. There’s no absolute truth. Only local models. Everyone knows knowledge is a social construct. Truth varies with your culture, how else could it be?’

My voice echoed and echoed, as if it bounced back to me from a great dark box. Three enormous black crows came down upon the wires, thud, opened their beaks in a parodic squawk: Caw! Caw! Caw!

‘I won’t dignify that disgraceful gibberish with a comment, Natalie. Duality is a precise, exact formulation of the nature of reality. On the one hand, we have relativistic compudynamics—lattice space at kernel level. That’s how we bit-flip from one location to another, by redefining ourselves on the local metric.’

Say what? ‘You’re shitting me,’ I said.

‘On the other, an equally exact truth: membrane cohomology.’ The appalling lattice twisted at every point, net stockings on the legs of a mad dancer with varicose veins. Gold threads on ebony black closed up into spinning loops, vibrating and knotting in immense sheets that spun through and about each other like a dream of ghostly fabric designers. ‘All is entangled, all is digitally precise and monadic.’

‘Yeah, yeah, whatever. Barong cast spells that worked,’ I said mulishly. ‘He floated up into the air, and he didn’t need wings.’ I sneered at his feathers.

‘Yes, and I explain, plain, plain, plain. He did it by rewriting his local parameters at the lattice level, or vice versa. Do not expect to comprehend this... this...’ He trailed off, turning his hands outward in a helpless Gallic gesture, evidently stuck for words to convey such profundities to a mehum like me.

‘Aporia,’ I said.

‘I beg your pardon?’

I stamped my foot. ‘Don’t patronize me.’

‘Excuse me?’

‘Dithering there, pretending you were lost for words. Obviously you’re a brain the size of a planet. Maybe a galaxy, for all I know. Gods don’t get tongue-tied.’

‘That’s very astute of you, dollink,’ said the White Rabbit, ‘but you overlook two factors.’ He was juggling a pair of squalling baby piglets and a spinning plate on a pole.

‘Only two? That’s generous of you.’

‘One, this colloquy is as fragmented as a dream, and try as I might it’s very hard keeping your mind focussed.’

‘Put the poor piggies down.’

The piglets sprouted vibrating wings, delicate pink filaments with a crusty rind, and flew up into the darkness.

‘Two, I’m just a node, compiled for the important but very restricted task of communicating with you. I have my limitations. Please do pay attention, you vexing child.’ Mrs. Gardner again. ‘You were about to explain "aporia" to me.’

‘What we called it back at dear old UCLA. A situation where two incompatible descriptions are both valid—aporia.’ Icy clarity had come upon me, and icy anger. ‘Deconstructive jargon. The philosopher Kant would have called it an antinomy. Hegel might have—’

‘Thank you. I had not realized your mind was so stocked with blurry buzzwords.’

‘You always made fun of me,’ I said angrily, my small triumph forgotten, then caught myself. Who had? But already Talbot was rushing on. Oh, my God. Talbot.

‘Under neither of these final, perfectly accurate and mutually-obliterating descriptions of reality is it possible to travel faster than light. Yet a voyage to another star system, even the nearest, can be nothing but a nightmare of isolation, deprivation at speeds slower than light. Would you cut yourself off from home for millions of years, Natalie?’

Bitterly, I said, ‘That’s what we’ve done, isn’t it? No, no, no, no.’ I wanted my mother. I felt like an infant shut away alone in my cot, left to weep myself to sleep.

‘We brought the mehums back, as you requested,’ I was told. ‘But their lives are fraudulent, trapped in millennial amber by their own self-chosen limitations, don’t you see? A non-stop Ruritanian romance, a costume drama. How else could it be?’

‘Oh.’ That was a real downer. I slumped, feeling emptier than ever. ‘It’s just a VR sim after all.’

Horus rose, unfurled his wings, smote them against the fire-spitting air. ‘No! Listen to me, child! Those are their true lives, but lived under the shadow of all the possibilities their choice has denied them. You could be gods, all of you; you have decided not to be. By the standards of the great minds, they are poor little mice playing in the wainscotting.’

My mouth filled with bile. ‘You bastard! Such contempt? Fuck you.’

In the long dark silence, I found that he was gone. I drew the golden watch from my fob pocket and opened it. It ticked, a kind of comfort in the emptiness. Perhaps its hands touched the correct numerals; I could not tell, in the shadows of the night. Chest muscles tight, I waited, fighting for air, hoping for the return of morning...

## **Eighteen**

**..Awoke, like cold water in my face.**

I gasped, trembling, as if I hadn't taken a breath for a year or two. The stink of smoke came to me from my clothes and the expelled air from my lungs. I stumbled, fell against Hugh, who was singing softly, 'To be a Pirate King.' He looked with a mad surmise at the robed woman who'd reached out to steady him.

'Grace,' he blurted. And then, 'No, you're not—'

'Hello, Daddy,' the young woman said, and winked at me. 'Hi, Nats.' She went down on her haunches, reached out her arms to the dazed pup. 'And how's my darling old Ferdy?'

The man standing behind her looked rather like Barong, except that his skull was completely shaved, and he was at least ten years older than he'd been a fraction of a moment earlier. And so the young woman, the beautiful young woman obviously in her glowing, grown-up late twenties who looked so much like Mom, was—

'Suzanna, you pig,' I yelled, rushing at her, wrapping my arms about her waist and bursting into tears, 'you've done it again. You beast, you've turned into my older sister!'

Controlled Experiment, a.k.a. Fluent-by-Starlight, had been a spy, of course—she spied for the people who'd raised her, poor changeling. You couldn't help feeling some sympathy for the child. I knew what it was like to lose a mother, and a whole world. She'd just been a little girl when the True Knowledge Realm people had come for her and made her one of their own, but she'd spent her life as an outsider, half-accepted as a lab rat servant, half-despised for her tainted Goetical roots. I think she really had wanted to return to her birthplace and take what she regarded, for one deluded moment, as her rightful place at their head, alongside the prophesied golden one. Bad luck, kiddo. Zanna had got her claws into Barong way earlier, and that girl doesn't let go.

We heard all this, and more, during the grand feast the two societies threw for us. Barong and his consort lived in a kind of floating palace in what had once been the South Pacific but was now, naturally, the North Pacific. He and Zanna had been married seven years earlier with all due pomp and ceremony, when she came of age by the measure of the Realm of True Knowledge and the Goetic Folk alike, who were more similar than they'd ever imagined. It was quite sickening, actually. My sister the Princess, sort of thing. I had to admit she looked good with it.

There was a kid, too. My niece. She was four, ringleted, gold-and-ivory, and cute as a button. Her name brought two kinds of mist to my eyes: Grace Natalie.

Believe it or not, that girl Zanna did love me, for all our silly rivalries.

'We tried to get you out of the suspension spell,' Zanna said, wolfing down a whole small roasted bird and wiping her hand indelicately on the front of her lacy gown. 'Troll decamped back to the Realm in all the confusion—they had a manta waiting on stand-by for her—taking the decryption key with her. She finally broke down last month and gave us the password.'

I shivered, wondering just what kinds of inducements might have been brought to bear on poor confused Troll. I shook off the question without asking it aloud.

'Password? What, it's like locking a computer program?' I could remember that much from our own time—you used a security protocol based on some awesomely long prime number that not even a supercomputer could crack if it tried all the combinations until the end of the universe.

'It's exactly like a computer program,' said Zanna, with a satisfied burp. Green Tree Frog, sitting opposite and rather heavily pregnant, sent her a carefully masked but appalled glance. Zanna couldn't care less. She swung one leg over the other and leaned back, quaffing some mead. 'It's like Mom told

us—Gaia is a computational structure implemented on the atomic patterns of the whole earth.’

‘Huh?’

‘Oh, sorry, I forget that your education has been badly neglected.’ She grinned at me, and I could easily see that bad seventeen-year girl she’d once been, before all this had started, a few days ago. ‘Barong has been teaching me advanced systems science. No, the point is just that Goetics is science.’

The thin-faced Goetician, now sitting at Ms. Frog’s side and thin-faced no longer, distinctly plump and domestic to tell the truth, and presumably the cause of Green Tree’s current expanded condition, jerked in indignation at this overheard heresy. I had the feeling there’d be a lot more startled double-taking and mind-boggling and turf-warfare before the two kingdoms were thoroughly integrated, but was impressed by how much political fence-mending Zanna and Barong had managed in just one decade.

‘Didn’t someone back in our time say that any sufficiently advanced science is indistinguishable from magic?’

‘That’s it exactly,’ Zanna said. She clicked her fingers at the help, who brought her a finger bowl, then clicked again. Mistress of the dinner-party circuit, my sister murmured instructions in the ear of her maitre d’, who scurried off to set up the dessert course. ‘The other way round’s true, too. Any sufficiently advanced magic is indistinguishable from science.’

‘Weird science,’ I said.

‘Of course, it helps when the computer running everything is conscious as well as hyperintelligent,’ Hugh said, leaning across some bombastic artist who’d been bending his ear unmercifully. ‘Especially when that consciousness contains the uploaded spirit of your wife. Or in the case of you two young women, your mother,’ he added, looking ridiculously blissed-out, the way he’d been ever since he and I and Ferdy had been released from the suspension spell.

I frowned at Zanna, and she raised one eyebrow blithely. As far as she was concerned, this nonsense about Mom was a benign delusion, sufferable if it kept the old man happy in his declining years. I had tried to convey to her something of my own experience, my sense that Grace had been there with us; she’d brushed the suggestion aside.

‘Forget it, Nat,’ she’d said. ‘It’s true that Gaia is a genuine cosmic mind that controls the earth these days, and not just the earth. Has been for millennia, ever since the Spike. But it’s way beyond petty human personalities. We’re like ants looking up at a woman and imagining she’s a really big, complicated ant. Have to keep a sense of proportion about these things, Nat. We have to stay real.’

I sank a spoon into my dessert, which was delicious and half-Goetic so that all the calories would vanish a few moments after you swallowed it. I’d already lost a kilo, and liked the way my figure was headed.

‘Gaia can’t be that different from us,’ I said mulishly. ‘It kept the True Knowledge lunatics from blowing up the world with nuclear weapons during the last few hundred thousand years. And heaven knows what would have happened if the Goeticians had been allowed to let loose with their spells in a big way. I tell you, Guy is keeping her beady eye on us ants.’

‘Maybe, honey. Oh look, the little minx!’

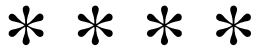
Grace Natalie had nagged her nanny into bringing her down from the nursery. She ran full-pelt at her mother, who snatched her up efficiently and popped the child on her lap.

We fussed for a while, and from the other end of the formal table setting Barong looked paternally and



perhaps paternalistically pleased. Hugh, naturally, was fit to burst with pride at his grand-daughter. After a time, I murmured to Zanna, 'Do you think Mom would care any less about us than we do about this little sweetheart?'

My sister raised one eyebrow, then shrugged in mock surrender. 'You might be right, darling. Let's hope you are.' She didn't sound very convinced.



Someone was knocking on my bedroom door. A soft light came on magically when I muzzily asked it to, and a doll on the table beside the bed informed me, 'It's three hours and twenty-five minutes before dawn, mistress.' I had no idea what that was in ordinary old-fashioned clock time, but it felt like the middle of perfectly good sleeping time.

'Who the hell is it at this hour,' I mumbled grumpily. I'd drunk too much mead, and forgotten the short spell that takes away its ill consequences.

'Your father awaits without,' the doll said. 'Shall I allow him entrance?'

'Of course, you dope,' I said. Ferdy was already up and waiting, eager and wondering, just inside my bedroom door. He'd taken to sleeping with me since we'd shared our ten year Sleeping Beauty stint courtesy of the Troll. I think Barong's implants had got a bit out of whack with old Ferdy's, and the two amigos never quite made it back onto their earlier man-and-man's-best-friend wavelength. I had my pup back, which was nice, but I often thought he found the swap less than satisfactory.

The door peeled open like a flower, and Hugh dashed in, flushed and jittery with emotion.

'Time to go, Natalie,' he said, delving into my wardrobes and piling up my clothes and possessions in a heap on the floor. 'She's sent a manta ray for us. Chop chop, out of bed, don't bother with the ablutions.'

I stayed where I was, of course, pulling the covers up to my chin. The man had gone stark staring nuts.

'Who's sent a manta?' I snarled. I hate missing my beauty sleep. 'Zanna? Can't be, I saw her drag Barong off to bed the moment the last guest was pushed out the door.' Hugh threw my old jeans and tank top on the bed and turned his back in a marked manner. I sighed and climbed out, dragging on the ancient garments. 'You don't mean the Troll, surely? And why should we care?'

'Your mother,' Hugh said, tossing over my walking boots, which had been nicely repaired and heeled by a Goetic cobbler. I hoped the new leather wasn't due to vanish like the calories in my cakes. 'I mean your mother, girl. She wants us to return to the vacuole.'

You know that icy trickle of water down your spine? I shivered and stopped pulling my boots on.

'Daddy, Mom is gone.'

'You know that isn't true, sweetheart.' He looked at me with charmed eyes. 'You and I spoke with her.'

'We thought we did. It was just the Troll's awful magic.'

'No.' Hugh gave me a sharp look. 'Get dressed, Nat. She wants us on the plane and out of here. We're disrupting her plans for the world's redemption.'

Uh-oh. I remembered, long ago, thousands and hundreds of thousands of years, days and days ago in bone-weary experienced time, his wild announcement when the plague had been heading toward us from Manila. 'It's our salvation,' he'd insisted, hustling us into the spacetime constriction. 'It's time to quit the world.'

And look where that had got us.

I stared at him suspiciously, doing up my bootlaces, wondering if he'd finally flipped his lid. By now he had my things stuffed into a back-pack like his own, obviously a Goetical copy, and was all but hopping from foot to foot.

'Don't you think the locals will be a bit pissed when Zanna and Barong and the baby jump up and vanish with us?'

His brow clouded. 'I'm sorry, darling, but that isn't part of Grace's plan. That's the whole point, you see. Suzanna has to stay here and steer the world back toward its proper path.'

'Oh. Right.' He really was off his head. I decided to humor him, just walk with him out into the corridor and down to the front of the palace. He'd find that no-one was waiting for us, let alone a manta inertial-drive aircraft, and it would bruise his self-esteem for a minute or two, but it was better than arguing with a man driven crazy by grief. 'Fine,' I said. 'Let's go.'

Ferdy came to heel, wagging his poor stump. We went out. And found the rest of the family coming toward us at a rapid clip.

'Oh, Daddy,' Zanna moaned, and flung herself into his arms.

'Don't worry,' I hissed out of the corner of my mouth, 'just play along with—'

'I thought she'd gone,' Zanna was sobbing. 'And she'd been here all along!'

'Gaia-consciousness,' Barong said, over the sleepy head of his daughter. 'Grace has been guiding the world all this time.' He smiled. 'No wonder there was such a convenient legend. She'd planted it, and nurtured it, waiting for us to arrive.'

'Exactly,' my father said, seizing golden boy's big grown-up hand and pumping it like a man going away for a very long trip from which he might not return, 'exactly.'

'You heard her voice?'

'As you did,' Hugh told him. 'She wishes us to meet her at the end of time.'

I stared at them all, in the dim glow of the palace corridor, convinced that the whole bunch had taken leave of their senses.

'The end of time,' I said flatly. 'But you three are staying here, right, to do the noble right royal thing.'

'Don't be sarcastic, Nat,' Zanna told me, with a rueful smile. She sounded precisely like Mom, who could correct you without making you feel like a criminal or a worm. I felt such a rush of loss and sorrow that I nearly lost it again. But I couldn't do that. I didn't want us all breaking up and slobbering and sniveling all over the place. So I stepped forward and hugged her, and gave her the biggest kiss, and then went to my darling Grace Natalie and kissed her sleeping, sweet-smelling head so softly she wouldn't wake up, and squeezed my brother-in-law's golden arm.

'Miss you,' I said, choking.

'Yes,' he said. His eyes were flooded. 'We shall meet, when all is brought to completion.' I could tell it was just a hope, rather than a scientific or Goetical prediction.

The manta was waiting in the dark night. Someone I recognized was sitting at the controls. We climbed in, and the machine lifted from the ground like a song.

'Good morning, Fluent-by-Starlight,' I said.

'Call me Troll,' that bad girl said, and hugged me back. 'Come on now, wipe away the tears. Hugh, I thank you for this opportunity.'

'It was Her suggestion,' my father said simply, and you could hear the capital H.

The woman was just recognizable, her black hair long and flowing but her face was the face of a lab rat redeemed from a fate worse than running an endless maze.

'Okay, Nat,' she said, leaning back in her padded chair, 'tell me all the gossip I've missed.'

## Nineteen

Green flash, momentary  
headache: the year \$10,852,606  
plus change (you can't think of a  
number like that as a date, it has  
to be a rich person's bank  
balance). The world beyond the  
lava shield was mostly under  
water. We were poised on the  
only tip of rock in sight. For one

mad moment I wondered if Mom had managed this for us, saved us from drowning. I shuddered to think what it might have been like if we'd come out three miles under the ocean, or stuck inside a new mountain range.

Hurriedly, we ducked back inside the lava shield. I felt sick with sorrow. My beloved, irritating sister Zanna, and Barong, and Grace Natalie especially, poor little darling, and all their adopted world were dead, bones ground to dust, were forgotten, and had been for more than ten million years. I couldn't take it in. In amethyst nightmare, Hugh flicked the function keys. Another green flash. Instantly, we were more than 159 million years into the future. And my heart was just as heavy.

Wind blew through sandy grass in the late evening. Waves broke in long hushing sighs upon a shore not far distant. No insects chirred, no birds flew. We found scraps of fallen wood, built a fire, ate in silence and then, miserable, listening to gloomy lilting Irish folk songs on the portable DVD player.

Our small campfire had almost burned down to dull red embers when night fell with startling suddenness.

'That's how it is in the tropics,' Hugh said. 'Our location has rotated back toward the equator with tectonic drift. No twilight, no long ebbing of the light.' I couldn't help feeling that he was really talking about Zanna's life, the way she had been snatched away from us not just once but twice, and then for good. Like a match lit and snuffed out. When the full clear darkness was truly upon us, I saw the diamond diadem in the sky.

'Daddy, look,' I breathed, almost choking at the beauty of the wonderful thing directly overhead, arching from east to west. Although the Sun had set, its rays reached high above the faint curve of the horizon to sparkle in the jewels that people had cast there during nearly a hundred and sixty million years of lost history.

'An orbital ring,' Hugh said in an equally hushed voice. 'How extraordinary.'

'Satellites?' I asked him, hardly able to believe it. 'There must be millions of them.'

'Habitats, I suppose,' he said, peering up at the curved line of light. 'Yes, millions, I guess, all orbiting the world in a vast equatorial band. I wonder if anyone lives there any longer?'

It seemed unlikely. The earth was abandoned, you could feel that, somehow. Except for the spirit of

Gaia, now extended, perhaps, to the far reaches of the Galaxy. And the Galaxy itself, I now saw, also curved there, as always, behind the brilliance of the orbital ring. The Milky Way gleamed as it always had, hundreds of billions of stars that looked from the ground like a mist of spilled light.

‘No Matrioshka Brains,’ Hugh said, musingly. I looked at him in the red glow of the coals. ‘No embedded Dyson shells greedily hugging all the light of their suns,’ he added. ‘They went beyond such crude technology too fast, I suppose. I wonder where they are, those great terrible Minds?’

After a while he got up and gathered some more of the branches we’d piled up. He fed them one by one into the embers, fanning the flames until the fire boomed up again and spat sparks into the dark heavens. As our eyes adapted to the leaping red and yellow flames, the Milky Way and the ring of golden and blue-white space habitats faded into the random scatter of stars at the horizon.

Clouds moved in at last from the sea like lonely galleons, blocking out the sky. I helped Hugh put out the fire. We looked at the empty world, shivering, and found our way back through the night to the discontinuity. Again we jumped.



In the year 2,334,742,863—by the ancient count that certainly was wrong by now, since the Earth’s orbit must have slipped already somewhat farther away from the Sun—a strange herd of animals awaited us.

‘Drastic plate movement,’ Hugh muttered, consulting his map. Incredibly, some sustained stream of information still flowed from space into the GPS display, presumably kept functioning just for us. ‘Look, the continents have slipped over the shell of the earth, converged like immense juggernauts into the single landmass of Pangea, then kept tilting.’

I wasn’t watching the map; the herd held my gaze captive. They were no animals any human eye had ever beheld. No two were alike. Yet I did not think they were aliens, arrived from some distant star. They had the look of creatures that belonged here, had evolved on this whimsical, flowing planet. In the sky, high overhead, the Sun seemed to shine harder than it had been minutes before.

‘Look at the Sun,’ I said, shading my eyes. Where are your Raybans when you need them? ‘Does it seem brighter to you?’

‘It is indeed, dear.’ Nothing much fazed Hugh, ace scientist. ‘We’d better find some shade. You know, the Sun’s simply a nuclear fusion torch. It’s always been getting hotter, and by now it must’ve grown as much as 40 percent brighter since our day... Doesn’t look that bright, Gaia must have provided a filter. One more leap, though—’ I was wrong; that did faze him. He shivered, hunched his shoulders. ‘In another four billion years, long before we emerge, it will be a huge red disk covering a quarter of the sky, thousands of times brighter than today. Something like that. Expanded out to swallow the orbit of Mercury.’ He paused, pulling at his lip, calculating and comparing projections in his head. ‘Then helium burning for a hundred million years. By our next leap, it will be extinguished. Earth will be lightless and lifeless, melted, without free water or air, unless it’s been crisped to a cinder.’

‘Oh, great,’ I said. Too much, too appalling, too monstrous a horror to take in. Levity. Mockery, that’s the answer. I crouched down and drew Ferdinand into my arms. The pup whined, ears pricked forward, watching the animals of the future. ‘So we’ll be left floating in deep space with nothing to breathe.’

‘Your mother will provide,’ Hugh said with complete, loony conviction. I wondered if I could manage to

jump on him from behind, wrestle the remote control out of his hand, smash it with a rock or a hammer. I looked around wildly. No hammer. No rock.

Ferdy ran out and started barking loudly at a creature whose mother had been a warthog and its father a praying mantis, and a very tall mantis at that; the creature was at least six feet tall. It looked surprised at these attentions, and after a moment of contemplation raised itself on its hind legs and quite convincingly barked back.

The dog went crazy, jaws flecked with spittle. The last time I'd seen him in this state, a huge ugly Rottweiler had challenged him in the park. Several of the smaller creatures scurried at once to safety. A snail with a soft, double-lobed paisley shell immediately rolled up inside its portable home, leaving just one tentative eyeball extruded

'It will a few seconds until fluency complete take,' said the barking animal, clearing its throat. 'Apologies, it will take a few seconds until I achieve complete fluency. Please forgive me.'

Ferdy was so surprised he stopped his irate performance and sat back warily. Hugh seemed fascinated, but said nothing. 'Forgiven,' I said. 'Who are you?'

'I am a creature of this Galaxy.'

'I take it,' Hugh said, 'we are still on Earth, and that's the Sun?'

'Of course,' the creature of the Galaxy said. 'But these days we do not make especial distinctions between individual planets, or indeed individual star systems. We go here, we go there.'

'How is it that you speak English?' I said. 'Surely it has been a dead language for billions of years.'

'I don't speak English,' the creature said in perfect English. 'The cosmic mind speaks everything there is to be spoken, and then some. I just tap in.'

'The Sun seems extraordinary hot,' I said.

'It's going to get hotter,' the creature said. 'Any day now this planet will be as crisp as toast.'

'You know about toast,' I said.

'Not really,' the creature said. 'The cosmic mind has databases beyond number. If I needed to, I could learn about toast. But why bother? You can tell me what it is if you wish. I will listen politely.'

'Toast,' I said, 'is cooked bread.'

'Funny,' said the creature. 'I had the distinct impression that bread is cooked wheat.'

'It is,' I said.

'So toast is wheat that has been cooked twice?'

'I suppose.'

'Why then,' said the creature snidely, 'shouldn't the prudent chef just cook the wheat for double the original time and have done with it?'

'Then it wouldn't be crisp when you wanted to eat it.'

‘Frankly,’ said the creature, ‘I’ve no desire to eat the vile stuff at all.’

‘But I have,’ I said. ‘My father and my dog and I are a very, very long way from home and a really nice slice of crispy toast covered in butter and marmalade would make us feel that everything has not been lost.’

‘Oh, everything has not been lost,’ the creature said. ‘I am here to tell you that everything is to be gained. But I must confess that toast and marmalade are beyond me at the moment.’

‘How is everything to be gained?’ Hugh asked, slashing through this blather. ‘And who has sent you to tell us?’

‘I have been sent by the Galaxy itself,’ the creature said. ‘But within the galactic mind there are many trillion trillion sub-minds—one tonality that was once called Grace is especially anxious for you to be informed.’

‘Grace...’ Hugh said, looking as if he might faint. ‘Mom!’ I blurted, simultaneously. ‘Is she near here?’

‘She is sampled everywhere,’ the creature said. ‘And her message is simple: keep travelling.’

“‘Keep travelling’?” Hugh was incredulous. ‘That’s all Grace has to tell us, after all this time?’

‘All of any substance,’ the creature said.

‘Surely there’s more?’

‘Not of substance.’

‘Well,’ I said, ‘tell us the insubstantial stuff.’

‘Oh,’ the creature said, ‘she says she loves you.’

‘We love her too,’ I said, and my lip trembled.

‘Oh, Grace,’ Hugh said. His eyes were shiny, and for a terrible moment I thought he was going to break down and bawl like a baby. An animal with feathery pink fans wafting gently above its plump, eyeless cheeks started to croon, and took a step forward as if to comfort us.

‘Quite so, quite so,’ the praying warthog said. ‘But don’t be distracted by the peripheral. Note well the heart of the message: keep travelling.’

‘We are going forward by huge leaps and bounds,’ Hugh said. ‘Our next leap will take us thirty billion years away from home. Is this what Grace wants?’

‘Apparently,’ said the creature. ‘I have to tell you frankly, it all seems irrelevant and incomprehensible to me. My own life-cycle is only seven years long, measured by this old world’s round. Six of those I spend under the ground, musing on all things. Then out I pop, mate with one of my kind, bit-flip around the presentation of the Galaxy on my Grand Tour, lay eggs and die. Just why you people want to go gallivanting through the ages is beyond me.’

‘Trust me, we do,’ I said. ‘Goodbye.’

‘Goodbye,’ said the creature. ‘Bon voyage.’

Ferdy was gone.

‘Shit.’ My heart leaped. I craned around, feeling sick, but couldn’t see him anywhere. ‘Hey,’ I yelled at the back of the departing praying warthog, ‘do you know where our dog’s got to?’

The animal turned its long stalk of a neck and its hog’s face scanned the landscape. ‘He hasn’t bit-flipped,’ the creature called, ‘I can tell you that much.’

‘Huh?’ Another piercingly intelligent comment by Natalie D’Anzso, M.A.

‘Flipped to another place zone. But he hasn’t done so. He’s still here, his cognitive patterns remain loud and clear. Oh drat, your friend and companion is rather boisterous, isn’t he?’

‘He likes to run about, that’s true,’ I said.

‘He likes to chase other creatures,’ said the praying hog indignantly. ‘And that, I’m afraid, is unacceptable behavior. How would he like it if something much bigger than he chased him up a tree?’

‘Dogs can’t climb trees,’ I said pettishly.

Without Barong to act as a spare back-up brain and accelerator chip, poor Ferds seemed to have dropped about 80 I.Q. points, reverting to his old doggy ways. With no calico cat here to chase, he’d found the nearest available substitute. Probably a substitute with an engineering degree in solar fusion physics. Fuck.

‘Just tell me where Ferdy is,’ I said, cringing a bit. ‘I’ll go and bring him back.’

‘The acoustic signals should prove sufficient guide,’ said the praying hog, pointing east with a long insect leg. ‘Goodbye again.’

I ran off after the bad pup, wishing I had a leash with me, my father pounding along ungracefully at my heels. Now that I was listening for it, I could make out distant barking. Oh yes, I knew that bark. It meant he had a small gray six-headed galactic physicist cornered up a tree. Hugh and I found Ferdinand leaping around the base of a large plant, perhaps a tree but resembling no tree I’d ever seen, even on nature shows—a mass of vast richly purple leaves wrapped in burnished silver, growing horizontally from a single trunk. Each aubergine leaf was several feet across, like a stiff water lily. Perched on the edges of the leaves, a troop of small cute Walt Disney animals waved multiple limbs: legs, arms, or something else entirely. The little creatures shredded hard, metallic chunks from the edges of the leaves and threw them down at Ferdy. They seemed to be enjoying themselves, as did the leaping pup. I felt deeply embarrassed.

‘Hello again,’ said the praying warthog, reappearing behind us. I jumped with fright. Presumably it flipped in through hyperspace or one of those higher dimensions Hugh was always telling us about. But there was no ‘us’ any longer, just me. Me and him. I felt sick with loneliness and grief, and angry at my silly dog and the aliens that were goading him. The warthog said reprovingly, ‘This is what I meant by unacceptable behavior.’

‘For God’s sake, they’re all just having fun,’ I said defensively. ‘Look at the things in the tree, they’re having the time of their lives.’

‘The "things in the trees", as you rather coarsely put the matter,’ said the wart, ‘are Thaajelomali, a beneficent gathering of philosophical econometricians. Kindly observe that they are being enticed to atypical frivolity by the aggressive behavior of your quadruped colleague.’

You could put it that way. ‘Hang on,’ I said. ‘Ferdy, heel!’



I seized the baying beast by the scruff of the neck and hauled him away from the tree. Quite hard chunks of ripped leaf rained down, catching the bright light, but in fact more like portions of stale pizza than metal or raw vegetable matter. Once I had dragged Ferds well away from the tree, I stopped and looked back up at the Thaajelomali, breathing heavily. The Thaajelomali looked down at us, benignly, it seemed to me, but drooping a little. ‘You see,’ I told the praying wart, ‘they’re disappointed. I’ve spoiled their fun.’

‘Aggressive behavior must not be encouraged,’ the wart said.

I shrugged. The Thaajelomali gathered on one of the larger leaves, in conference, then cascaded out of the tree, scampering across the rough grass towards us. They didn’t resemble any economists I’d ever seen. And where the hell had Hugh got to? Ferdy barked.

‘Cool it, Ferds,’ I said, keeping a good grip on him. ‘These good old boys just want to have fun. Please try not to eat anyone.’

The Thaajelomali surrounded us, voiceless but organized. Several reached with palping, articulated hands, patting at Ferdinand and me. Apparently they found the difference between the species girl and dog not all that noticeable. I put up with their endless happy little hands. ‘See,’ I told my dog, ‘they want to be friends.’

‘Nonetheless, I believe it would be inadvisable to release your carnivore,’ the praying wart said anxiously.

But Ferdy evaded my grasp, gamboling with the Thaajelomali. From nowhere, other exotic species arrived to join the fun. A pair of striped flying creatures built along the lines of a zeppelin drove themselves through the clean air by controlled farts.

‘Oh dear,’ my father said at my shoulder. ‘Matters may now turn very nasty.’

Ferdy, the Thaajelomali and the rest of the menagerie rushed across the landscape in a pack, joyous as dolphins; they disappeared into a thicket of silvery daisies. I was rethinking my assumption that these critters were brain surgeons and rocket scientists.

‘Oh, well. I shall leave you to it,’ said the praying hog, and was gone, like a popped soap bubble: flipped.

‘They’re like kindergarten kids let out early,’ I said to Hugh.

‘None of those creatures is independently intelligent, unless I miss my mark,’ he said. ‘Domestic animals, that’s what they are. Bred for docility here over billions of years.’

‘They don’t look like anything I’ve ever seen before, Dad. What makes you think they’re not aliens?’

He regarded me with a solemn expression. ‘Natalie, we’ve come half as far again into the future since we first entered the vacuole as the entire history of planet up until that time.’

Oh. Oh. That vast, echoing gulf roared beneath my feet, made me topple with momentary vertigo. Everything, everything, gone, I thought again. Pizza with runny Mozzarella, and Dr. Pepper, which I’d devoured so greedily and happily despite my severe nutritional upbringing. The skyscrapers of New York, the Taj Mahal, Emily Dickinson and Margaret Atwood, Shakespeare and the Bagavad-gita. Rome and Greece and Egypt, more lost than mythic Atlantis. Citizen Kane and West Side Story, and the Big Spew. Poor darling girl, gone, gone. My eyes prickled, and I reached for Hugh’s hand, squeezed it tight. ‘Van Gogh,’ I said, not expecting him to understand. But he did.

‘I know. Debussy. Steam engines. The memory of Einstein and Schrödinger and Aristotle. Africa and Europe and America, the very land masses. My dear, blessed Grace.’

After a time, I shook myself, wiped away the tears on the back of my hand. ‘None of that means these creatures are indigenous to Earth,’ I said gruffly. ‘Yes, I suppose enough time has now passed for a whole new ecology to evolve. But they don’t look like domestic animals to me, Dad.’

‘They didn’t look much like economists and engineers to me, Natalie.’

‘The first one was conversing rather well for an animal,’ I pointed out.

‘I believe they’re just like Ferdinand,’ Hugh said. ‘Probably born with genetically engineered implants so they can link to the galactic consciousness when need be. More to the point, so it can link to them. What we’re seeing is the ultimate evolution of computer networks—living creatures able to input and output information for a huge shared mind. Ferd should feel right at home.’ Shaking his head, he smiled ruefully. ‘They’ll be gone till nightfall. Let’s go back and light a fire and cook up some soup.’

That night’s gorgeous pastel sunset took at least an hour to fade, so Hugh said we’d obviously floated a long way on the Pangea plate, well down below the tropics again. But the wait for nightfall was worth it.

‘Oh my God,’ Hugh said, as the first stars began to prick out in the heavens.

‘Funny way to set up your satellites,’ I muttered. I’d just finished off the last chocolate bar from our stores, and so I was feeling rather grumpy. I licked my lips regretfully, looking up at the pattern emerging overhead. ‘They must have built more of those orbital rings and stuck them everywhere. You’d think they’d bang into each other.’

‘Not satellites, darling. Those are stars,’ Dad said, and came and sat down beside me on a shelf of cooling rock, putting his arm around me tightly. ‘That’s what they’ve done to the stars.’

I didn’t understand, and then I did, and my heart jumped and my chocolate-lined stomach did a little terrified spasm.

The sky was a vast curving criss-cross grid of points of hard light, like atoms seen from inside a crystal.

All my life, the stars had been scattered across the heavens pretty much at random, except for the blurry band of the Milky Way. Oh, you could pick out the odd bright star or constellation—Polaris, Orion and its Belt—but I’d always known that they were just a kind of game or trick the mind played on itself. Actually, the stars that seemed to make up a recognizable group were usually many hundreds of light years apart, in the depths of space. It was only from earth that they formed the patterns we chose to call constellations.

Not these stars. Oh, no.

Someone had actually revised the sky. Somebody had come in and moved the stars around. Some Mind had reached out and flicked the billions of burning suns of the Milky Way as if they were some kid’s marbles.

‘A moiré pattern,’ Hugh mused.

‘A what?’ I looked at the changed universe with deep horror, but also with a wild wonderment. What kinds of beings could do something like this? Zanna and I were raised with no religion, but this kind of caper made you think of the myths and legends of Greece and Rome, gods who built the sky and could change it with the jab of a finger. But those old-fashioned gods were stuck on a flat earth under a sky

where the Sun was thought to spin about the world, not the other way around. Those old story-tellers had no idea how far away the stars were, or how big suns are.

‘It’s a spherical grid,’ Hugh was saying in a frail voice, ‘all the stars have been moved to locations at regular intervals on a series of concentric spheres,’ but I hardly heard a word. I just looked and looked, and you could see places where the spots of brilliance ran together, which was just where the lanes of light overlapped in the endless dark deeps of galactic space. The Milky Way itself was gone, its billions of stars relocated into the grand crazy rational design. But you could pick out the core of the Galaxy, because that was the brighter place that the endless onion skins of stars wrapped themselves around.

‘Wow,’ I said. ‘Oh, wow.’

‘They’re back,’ Hugh murmured, touching my arm.

Some of the twinkling lights, I realized, were the eyes of brilliant animals. They gathered at a decent distance from the fire, heads and bodies lost in the darkness and the glow of the flames dancing in their wide eyes. Presumably one of them was our pup. If so, he stayed with his new companions. He did not venture back at once to the company of humans.

‘Ferdy,’ I called, my voice breaking a little. ‘Come on, kiddo, it’s nice and warm by the fire.’

There was a tentative yip, and the animals shuffled a little closer.

‘We’re so far from home,’ I called softly, hardly more than a whisper. ‘Come on, old fellow, don’t leave us alone. Here, we’ve kept a nice juicy treat for you.’ I fished out a fleshless ham bone from the bottom of the soup pot, the last of the food that Grace had packed into the basket when we ran from the plague, kept for all these days and thousands of millions of years inside a cooler hidden within a spacetime constriction that had exiled us here in the impossibly remote future. I threw the bone into the darkness, heard it thud on the dry grass.

‘Come on, boy,’ Hugh called encouragingly. ‘I know you’ve lost your pal Barong, and your implants don’t work any longer, but don’t give up on us, dear fellow. We have a long way yet to journey. You know what she told us to do. We must travel onward.’

‘You must continue your journey, yes, in time,’ a high, quaint voice said from the circle of watchful eyes. ‘You, Hugh, and you, Natalie. Not I. I have found my place. I shall remain with my friends.’

Something oddly misshapen padded out of the night and lowered itself on its haunches, to one side of the fire. I squinted my eyes as a streamer of stinging smoke blew my way, and saw that Ferdinand carried a small rider. Ferdy’s jockey was a kind of caterpillar with a trumpet at one end, clinging to his fur with forty or fifty thumb-sized suckers.

‘You can speak now, Ferds? I thought you’d forgotten all your cool tricks.’

‘It’s me, dear one,’ said the piping voice, and Ferdinand’s bark followed as if in confirmation.

I was suspicious. This was the kind of trick you’d expect from a weirdo like the praying warthog. Hmmm.

‘Ferdy, how many did I meet coming from... you know, that place?’

After a long silence, I heard from the fire-flickering night a series of short barking yips: two barks, pause, eight barks, much longer pause. One final bark. And the piping voice of his new companion animal said, ‘A good test, Natalie. The answer, as we have just indicated, is 2801.’

Together, they came forward; Ferdinand delicately picked up the ham bone in his mouth and began chewing it with noisy bone-cracking relish, looking for traces of tasty marrow inside. I started toward him, hand outstretched, but he growled at me, guarding his treasure, and edged backward on his belly.

‘I just want to give you a pat,’ I said.

‘You must leave now,’ the little voice cheeped. ‘There is a voyage you must take before you complete your journey within the vacuole.’

‘You know about the 6-brane vacuole?’ my father asked in astonishment, while I dabbed at my cheeks.

‘It is a key anomaly in this local spacetime. The Galaxy mind knows. It is why you are here, and why you must go on. Put the fire out before you leave.’

‘Voyage?’ I said. ‘What voyage?’

Ferdy dropped what remained of his bone and withdrew into the darkness. The lights of the eyes of the animals vanished. We sat alone.

After a while, Hugh stood up and began efficiently dousing the campfire. When he was done, the praying warthog stood beside us in the glistening moiré night.

‘Come,’ it told us.

We bit-flipped.

## Twenty

We waiting in a darkened place.  
After a long time, I said,  
‘Huis-clos.’

Hugh cleared his throat. ‘What’s that you say, darling?’

‘No Exit,’ I translated. ‘Old Jean-Paul Sartre play.’

‘Oh, yes. The famous punchline: "Hell is other people."' His voice was very grave. ‘To the contrary, Natalie. As you and I are only too well aware, hell is the absence of other people.’

‘Damn it,’ I said pettishly, ‘where have they brought us? I thought this was meant to be a glamorous tour of the Galaxy or something?’ I raised my voice. ‘Turn the lights up, you bastards.’

Blue light suffused us. Oh. We were back inside the amethyst crystal. That made no sense. Hadn’t they wanted to—

There was an impossible scrabbling at our backs. Yet I knew perfectly well, or thought I did, that we were utterly alone inside a higher-dimensional bubble within an empty universe; this small noise sent a chill shock slamming through my body. It was more uncanny and frightening than I can possibly convey. I spun, looked through the blue fog in the ambiguous glow of the tent lights. Something skittered across the card table. Something ran up one of the legs. Something jumped from an open deck chair.

‘What is it, Natalie?’ Hugh crouched, tense, teeth bared.

‘Welcome to our chorus,’ piped three absurdly shrill but perfectly clear voices, speaking in English. In the dimness, tiny eyes gleamed at us.

‘Oh my God!’ My jaw dropped, and then I was laughing like a fool. ‘Oh my God, it’s the three blind mice. No, I take that back. These are the three all-seeing mice!’

‘Mice? We have mice?’

‘This is a matter of gravity,’ chorused the mice, leaning their furry shoulders together. ‘Levity is out of place.’

My father slapped the side of his head, then rubbed his eyes in a corny gesture I could have sworn was only ever seen in melodramatic movies. And then I had it; I knew them. Straight out of my unconscious.

‘You’re from Babe,’ I said to the small visitors. ‘You’re the—’

‘Chorus, as we stated. So act with some decorum, an it please you.’

Hugh stared at me, bewildered. He could not abide motion pictures, let alone sardonic animatronic classics that made you weep even as you laughed.

‘Father, they’re the singing mice from the Babe movies.’ I snorted. ‘Talk about Pigs in Space—we’re stuck in a fucking episode of Pigs in Hyperspace.’

‘You realize you’re talking complete rubbish, Nat?’ Hugh raised one hand above his shoulder, and I thought for a moment that he intended to slap me across the face, snap me out of it or something. The mice beat him to it.

‘T-theory did not go far enough,’ they explained melodically, in their helium squeaks. ‘Gravity is propagated through all adjacent Dirichlet membranes. Do we need to dot the T’s and cross our eyes?’

Naturally, I said, ‘Wha—?’ and simultaneously my father murmured, like a man in a dream, ‘Ahhhhh...’

‘By George, I think he’s got it,’ sang the mice, congratulating themselves. They did a little wriggly dance, paws across each other’s gray shoulders, then skidded away and vanished down three of the legs of the table and into the wild blue yonder.

‘It was just a desperate theoretical contrivance, in my time,’ Hugh told me at last, after he’d sat silent, pondering, while I paced and let him think it all through. I knew that it would do absolutely no good to talk to him while his brain was churning. He looked at me, as blind as the mice were not. ‘You understand about the rolled-up dimensions, Natalie?’

‘Sure,’ I said breezily. ‘We studied all that during Brechtian alienation theory 201.’

‘Good, then—’

‘Oh, get real, you silly man. Of course I haven’t got a clue what you’re raving about.’ I put my fists on

my hips. 'And now I suppose we get the infodump exposition from the Mad Scientist to his Beautiful Daughter. Sorry, his plain daughter, we left the beautiful one a couple of billion years in the past and she died.' My voice broke, then, as I heard what was coming out of my mouth, and I leaned forward into his arms and sobbed for a while.

'There, there, sweetheart. Can I get you a hanky?'

'Thanks.'

I blew my nose, and pushed the handkerchief into my own pocket when I was done. 'Go on,' I said, then. 'You might as well tell me your great Einstein discovery. I won't follow beyond word one, but I'm the only audience in the entire Galaxy. Unless you count the mice, and they already know the punchline.'

Hugh looked hard at me, then ducked back inside the tent, came out with a bottle of good 2003 Shiraz, two wine glasses and an opener. He made a production of pouring, and we toasted each other, sipping, savoring the bouquet. I gulped down my second glass, then flung the empty glass onto the lumpy surface. It bounced, then rolled in a little circle around its base. Hugh's smashed more satisfyingly.

'You do realize that we've been hiding inside a fold in higher-dimensional space? The vacuole?'

'Whatever that means.'

'Darling, your education is—' He caught himself, cleared his throat. 'Usually we think the world is fully described in three spatial dimensions and one of time, right? Back and forth, up and down, side to side, and forward in time.'

'Forward in time is right,' I said, sitting in a ladylike manner on a chair where minutes earlier an impossible mouse had cavorted.

'It turned out there are eight more dimensions, well, nine if T-theory was right. Directions we can't probe, except by using fantastically expensive accelerator machines. But they're there, they always have been. The forces that make particles stick together and rebound are due to...' He sighed, threw up his hands. 'Look, none of that matters. Here's what does—gravity isn't like electromagnetism, or the strong and weak nuclear force. Those are restricted to operating in our customary four-space membrane. But gravity bleeds.'

Bleeds. I knew about bleeding. 'Uh-huh. It leaks out? That's why the universe is getting out of control and, and running away?'

Hugh was dumbfounded. He stared at me, agog. 'I always knew you were a clever young woman, Natalie.'

'Well, it stands to reason,' I said modestly, and belched. Wine does that to me on an empty stomach. 'Where does the gravity go? Radiate, whatever?'

'Into... Into parallel slices of the multiverse, you could say. Especially when a black hole forms. We always supposed that the mass lost into a collapsed closed space retained its, its effective force...'

'But it leaked out, right.'

'The gravity, most of it, radiated away from our universe's D-brane, yes. Think of our reality as a book. It's as if the unified strong and weak and electromagnetic force only works on a single flat sheet of paper, but gravity escapes from our sheet and radiates into all the other pages.'

‘Hmm. That’s all very well, but what about the gravity from those other D-brane pages, answer me that? Wouldn’t some of it leak back our way and, you know, balance the books?’

Hugh shook his head, smiling wonderfully, gratified. It pleased me, it really did. ‘You are a delightful person, Nat. Yes, we used to speculate about gravitation from undetectable dark matter. There weren’t sufficient visible sources to account for the rotation profiles of galaxies. But if those mice were right, it must have been leaking in from the universes next door. GIGO, you might call it. Gravity in, gravity out.’

‘Or in this case, GOGI.’

‘Yes. More out than in, apparently.’

‘I’d rather be out than in,’ I said savagely, and stamped my foot. ‘You do realize this is a sim? We’re not actually back inside the vacuole?’

‘A som, not a sim,’ squeaked a gray mouse scratching at my left foot. I squeaked, too, pulled my knee convulsively up toward my jaw. The mouse tumbled, slowing in the air, like a crab in water. Its two fellows caught it like gymnasts, peered up at us.

‘A som, a som, a semblable,’ they sang in their Chip Monk tones, with a very pure French accent on the final word. ‘Hypocrite lecteur!’

‘Good God, now the quotes from T. S. Eliot. Hannibal Lecteur, more like it,’ I said, disgusted. ‘Virtual reality again, eh? chewing its own damned tail. This is getting old, you rodent vermin.’

‘Appearance is deceiving,’ one mouse shrilled. A second sang back, ‘Plato’s cave is heaving, With all the Shadows leaving.’ The third paddled up and down through the air, doing a commendable breast stroke. ‘What you see is what you get, forget your disbelieving.’

They scurried together to the middle distance, hard to make out in the blue murk, and together started to sing, rather beautifully I have to admit, the first verse of Jimmy Webb’s classic Wichita Line Man. I pulled off my right shoe and flung it at them. They were gone as it struck the ground and bounced through the matte black doorway that had not been there before.

‘Look at the dimensions of that aperture,’ Hugh said thoughtfully. I felt he was taking it all remarkably well. ‘Nine feet high, I’d estimate, four wide, maybe one deep. It’s a sort of... ghost or negative of—’

‘Well? Of what?’

‘I thought you were the film specialist. An alien Monolith.’

I found myself breathing hard, and couldn’t decide if I were on the verge of a panic attack or an hysterical laughing jag.

‘2001?’ I said. ‘Like, the hyperspace gateway in that old Kubrick movie?’

‘They’re mining our memories, sweetheart,’ Hugh said. He rose from his imaginary canvas chair and started walking cautiously toward the black emptiness. ‘They’re feeding us these little fables, these... images that we half recognize. I believe we can trust them. Come on, darling, don’t loiter all day.’

In a very small voice I said, ‘I wish Ferdy was here with us.’ I joined him at the portal, and then, hand in hand, we stepped into the darkness. I bent, as I passed through, and retrieved my shoe.



Hugh was gone, his fingers slipped from my grasp. A man with closely shaved reddish hair turned, looking over his shoulder.

‘Oh, you again.’

I was beyond shock. After two and one-third billion years?

‘Hello, Tal,’ I said. I pulled my shoe on, bent to lace it up.

‘Last time, as I recall,’ he said, ‘we got trapped inside a mythical charade. Nightmares are less than optimal for communication. Admittedly, you were paralytic at the time. Nearly brain-dead. We did quite well, I think.’

I just looked at him, and at the star-splashed darkness behind him, above him, to each side. Immense clouds glowed, reflected more dimly in the polished floor, burning with diadems of hot stars. Surely they weren’t actually clouds, not the kind that rain and snow come from. Hydrogen, I thought then, startling myself, recalling something Hugh had told us as children. Primeval hydrogen and helium, or something, left over from the Big Bang and swept up in great shock waves from exploding novae to make baby stars. I stood in the middle of a birthing place for new suns.

‘You’re not really Talbot, are you?’

He reached out one hairy, shockingly familiar hand, drew me to his side, sat us down in comfortable chairs that had not been there an instant before.

‘Borrowed his semblance,’ he—it, whatever—admitted. ‘Hope you don’t mind the som. Figured it might make things a little... easier.’

I pulled my hand back. It tingled. ‘Shit, yeah. The bastard who stole my life, my car and my best friend. Ideal choice, really.’ I looked around, feeling sick and betrayed, as lost as I’ve ever felt in my life. ‘Where’s Hugh? And I expected Ferdy to be here with us. Where’s my dog?’

‘Ferdinand is no longer a possession; he is an integral member of a conscious composite. Your father is meeting his own guide, and will join us shortly. No,’ he added quickly, softly, maybe even out of kindness, ‘not an avatar of your mother. A childhood friend, Christopher Thomas.’

I vaguely remembered Chris; we hadn’t kept up. Maybe it was my parents’ apocalyptic, near-survivalist fervor. People tended to... start staying away. Dr Thomas had played infrequent squash with Dad. I think they’d been track and field partners at college, shared rooms, something along those lines. He, too, obviously, had been dead for roughly two billion years. Creepy.

‘You can do that? Just reach inside us and pluck out enough memories to, to morph up a convincing persona?’

‘Don’t worry, my dear,’ Horus/Horace/Tal told me, handing across a cold glass brimming with cola, and a plate of steaming do-nuts, ‘the contents of your mind are safe. Sacrosanct, even.’

‘You want me to believe your archives are that deep and wide?’ I shoved a hot, sugary thing into my mouth. ‘Reaching all that way back? My God, Tal died in the Manila plague. Even the damned Grand One wouldn’t have been able to... what do you call it?’ I searched, chewing. ‘Upload. There was no



brain to copy into your filthy archives.'

'But I'm not an emulation of your Talbot,' the thing said. 'I already told you that. I'm a neem.'

'Speak English.'

'I am speaking English, but sometimes I'll need to coin some words for things you don't know. A neem is a construct from memory, of course.'

I thought about that for a moment. 'Oh. An M-N-E-M-E.'

'Yeah, but let's lose the mock-Hellenist folderol. N-E-E-M.'

'Oh, by all means.'

"We have borrowed Talbot's appearance, sampling your brain phase state with perfect dispassion and security, supposing that this would ease your path to understanding. Were we wrong to do so? I can change into a more neutral manifestation, should that be deemed advisable.'

Deemed advisable. Good grief. Unintentionally, in a bitter, convulsive laugh, I snorted cola up my nose; sugar flew from the plate.

'This is my soul you're raping,' I told it, furious. 'My very self.'

'What is a self, Natalie? You discussed this topic often enough with Talbot, I think. The self is a mirror's silvering, casting back into local reality its partial reflection. Crack or warp the mirror and the self is crazed, shattered, doubled and redoubled in diminished echo; look into it merely, and the mirror's silver is still as a moonlit pool. The self is a locus in iteration phase space. The self, at its best, is the jewel at the heart of a laser, drawing in the garbled wavefronts of the world, transforming their noisy energy to coherent brilliance. You are in our loving custody; there is no violation.'

'You pompous prick,' I said. 'Rummage in my mind, wear whatever stolen body you like. Just tell me where I am, and what the fuck we're doing here.' I stood up, and the plate crashed off my lap on to the floor, where it smashed quite satisfactorily and then vanished. 'Dad!' I yelled at the top of my voice. 'Hugh!'

My father came around a corner—what corner? I hadn't noticed any corners in this great cathedral of stars—accompanied by a short, muscular man of about 20. Last time I'd seen Dr Thomas, his distinguished gray hair was receding, and his pot was evident. Maybe this was his son. Oh, no, of course. Prime time memory. I hugged my father, pressing my face into his shoulder, smelling his sweat, then shook his old friend's hand.

'Hello. Call me Chris.'

Somehow it was easier to accept this fraud without anger. 'Chris, do you know what they've done with my dog?'

He shook his head, still holding my hand in his cool, dry, comfortingly professional grip. 'Ferdinand has business of his own to pursue, Natalie. Leave him be. There's enough for us to handle now, and urgently. More than enough. Let's all sit down and talk.'

'I want this thing to go away,' I said ungraciously, and turned with an angry wave of my arm at Tal. But the revenant was gone. In his place, a beautifully jeweled slug watched us attentively, twivelling its horns. It glistened under its ornaments, and smelled faintly of the sea. In a triumph of self-control that surprised

even me, I did not shriek and jump up on the chair. Probably I can't take credit for my forbearance. Either I was totally numb by this point, or just metaphysically jaded.

'Horus, I presume?'

The mollusk's voice was glutinous but clear enough, issued from flaps to either side of the dorsal ridges.

'At your service, Natalie, as previously.'

Was this also a neem, or a som? I drew back, putting my fist in my mouth and biting my knuckles. No, damn it, let's not give it the satisfaction. I turned to Hugh and his long-dead companion.

'So where are we?' I gestured with my gnawed hand at the vast, gorgeous abyss, the burning points of light in gauzy cloud. 'The far side of the Galaxy? I thought faster than light was against the rules. I thought you super-brains found travel too tedious.'

Chris smiled at me, bade me sit on a comfortable Chesterfield that hadn't been there until we both noticed it. 'We're making some new stars,' he said. 'Pushing gas into place, switching on supernovae for the shockwaves, building new fast burners. You can get a lot of black holes that way, and a lot of extra stars. We need all we can get, black holes are our engines. But to answer your question, no, that's not where we are, exactly. It's a fane.'

'Always with the neologisms,' I said. I looked about for a drink, and found one near my right hand. I drank thirstily, gratefully. Flavored of kerosene and freesias, it made my nose wrinkle but packed a welcome punch. I closed my eyes, head swimming, opened them again. Hugh was smiling in a paternal and irritating manner. 'An F-E-I-G-N, right? You're just pretending it's there?'

'That's part of the pun.' Chris buffed his nails modestly. 'But really the derivation is Greek: phaneros, what is visible. Fane: a manifestation, in brief.'

'In brief, I'd fain hear less of words,' I said testily, 'and more of substance. What's with the black holes? Engines? I saw this Stephen Hawking retrospective about the Big Crunch.' I was babbling, anything to keep the sound of a true human voice going in this awful place. 'Like the Big Bang when the whole universe started, except the opposite, right? Everything crashes into everything else and it all gets sucked together and—' I couldn't remember the rest.

Hugh leaned forward, touched my arm as if to steady me. 'Darling, that theory had been superseded for a decade. If it were correct, yes, probably the cosmos would coalesce into many vast black holes that would merge finally in an enormous Crunch, or maybe bounce and form a new cosmos from the detritus.' He glanced at the neem of Chris, which shook its head. 'Even then, the evidence was against it.'

'It's coming back to me,' I said. 'The universe is expanding, but kinda slowing down... ebbing away, right?'

The slug neem had been replaced by a praying warthog neem which told me, 'Sorry, no. The universe will expand forever, but it's worse than that—things are rushing away from each other, always faster. Lambda's too high, you see, and Omega's too low. Oh, never mind that. The point is, all the galaxies will hurtle farther and farther apart, burn out one after the other. That leaking gravity, you see. After a while no new stars will form from the exhausted interstellar gas, and eventually—'

'So you're doing your civic duty by topping up the supply with some new stars. Very thoughtful.' I felt drunk and giggly. Surely none of this was happening.

'Good gracious, no,' said the Chris neem. He did something, and the fane twisted somehow, trickily, and

we sat in the midst of an immense explosion of lights: individual stars, I saw, that merged into a familiar four-armed spiral in diamond spattered black, then families of galaxies, walls of dark soaring to partition the clumps and streamers of light, flung outward with ferocious and unstoppable speed, brilliance guttering from blue-white to yellows and oranges and reds, falling at last to the limits of my vision, and still the terrible expulsion continued, the skies emptying, flaring explosions snapping light in brief candle glow gone in a moment, and then... nothing. Blackness inviolate.

‘That’s the far future,’ the neem said, sighing. ‘Nothing we can do about that.’

Abruptly, my emotional and physical reserves collapsed. My circadian rhythms were absolutely shot; time travel does that to you, no respecter of time zones. Plus, neither Hugh nor I had slept a wink since the banquet where we’d farewelled Zanna, Barong, the little girl, and all the misplaced, recovered, re-lost remnants of our world. I yawned, nearly cracking my jaw.

It’s contagious. Hugh yawned too, and rubbed his eyes. His face was drawn, I saw, and his eyes red-rimmed. The skin of his face sagged. We’ve both lost everything, I told myself, but he’s lost more than I have.

‘Okay, gang,’ I said, smothering another cavernous yawn. ‘Time to—’

Simultaneously, the Chris neem clapped Hugh on the back. ‘You two should catch some shut-eye, you look all in.’

My father inclined his head in agreement. He kissed me on the forehead, nodded to an elaborately garbed and intent rutabaga which had replaced the praying hog neem, turned away. ‘Show me the way to go home,’ he murmured in a sad, grainy voice. And was gone, and I was in another room, or the room we’d shared had changed in an eyeblink, one or the other. Or it had all been imposed on my mind from the outset. Whatever. I stepped closer to my king-sized four-poster bed, broderie-anglaise pillows plumped high, upper sheet turned down over a beautifully embroidered quilt. My grandmother’s, I realized. The room was warm enough to go without night garments. I kicked my shoes away, threw my clothes on the floor, and went through an oak door into a bathroom tiled in red with gleaming blue-white marble fixtures. A bath awaited me, three-quarters filled, steaming. The toilet was the kind I was used to at home, which was a relief in more ways than one. I returned then to the bath, conscious of my sweaty smell, the grime between my toes, stepped into delicious scented water with a happy sigh and let myself float there, breasts bobbing, aches slowly leaching from my poor bones.

After a timeless time some water went up my nose and down my throat. With a jerk, I caught myself, sat up, found a face cloth and scrubbed myself hard, half awake again. The ends of my hair were wet, but I couldn’t be bothered shampooing and drying it. Surely they had better ways to handle that by now, and I’d look into it tomorrow. Two wonderfully thick, enormous towels hung from enameled rails with gryphon heads at either end. I patted myself dry, then went to bed. Out like a light, without benefit of an emh.



I dreamed of Deb. Talbot and Deb and Nat, oh joy. It wasn’t a dream. It wasn’t real, nor a dream. Something—

—She stood at the edge of the star-splattered darkness and for a moment I went all to pieces. Pulled both ways. Deb was my best friend, after all, had been for nearly two decades, since we were the two hellraisers of second grade. At age twelve, delicately crumbling itching powder from the whirligig seed

Pods under the school-yard trees, protecting our own skin with lunch sandwich Saran wrap. Filling an envelope, then pouring the prickly contents quick as a flash down the neck of lard-ass Mandy Wilkinson while Mrs. Zamblatt chalked algebra on the blackboard. Mandy jumping and howling like a stuck pig, scratching her neck raw. The class going wild. Deb and I in the principal's office, Deb standing up to the old goat, speaking words of sweet reason in our own defense. 'Itching powder isn't poison ivy, Mr. RaglanSmith, it's just a prank. We were only fooling around.' The letters Rags sent home to our parents were no joke, the pair of us grounded for a week. Hugh did not approve of his child drawing attention to the family, and Deb's parents were law-abiding citizens, her father a self-righteous bank manager and prominent Baptist. It didn't matter, we spent the time on the phone to each other. Oh yes, we went back a long, long way, Deb and I, the bitch. The duplicitous, fork-tongued snake. You could say I hated her guts.

In the darkness I said, 'I've got news for you, Gorman, you're dead. Road kill. Dead as a goddamned rattlesnake squashed flat by an eighteen-wheeler. The plague got you. You and Tal.' I'd started to cry, but they were angry tears, mostly.

'I know, Nat darling,' she said. 'It's no big deal. Death happens to everyone eventually. It'll happen to you. Not just yet, that's all. They want you to go forward.'

I sneered. 'Don't get philosophical with me, Deb, it doesn't suit you. Dead or alive.'

She shrugged. In the dim light of a zillion stars shoveled into a bizarre construction, I saw her slender shoulders move, the familiar lines of the bones. 'Didn't do it to hurt you, Nat.'

'So why the fuck? To save me from Tal? To push me into the real world? Tal and Nat were having a really heavy time, says Deb, so let's do what a best friend does—seduce the shit and take him away.' My breath caught in my chest, choking me. 'Maybe you can fool yourself with that crap, Deb...'

'Nat, honey,' my best friend said softly. 'Tal left you. His decision. He's got a mind of his own. He didn't need me to seduce him.'

'Yeah, but you—'

'Tal and I got together.' She shrugged again. 'Nobody seduced anybody.'

'So when did you "get together" as you so delicately put it? Just how long were you fucking my boyfriend before you finally got your hooks in so deep he dumped me?'

'Nat, Nat, it doesn't matter. Friendship matters. You and I matter.'

I made a bitter sound, turned away. 'You don't matter,' I said. 'You don't matter because you don't exist. You're a som, Deb Gorman, you're nothing. Less than a ghost.'

'I'm your best friend. Always was, always will be.'

'What the hell have we got in common?'

'Tal, for one thing.' She spoke his name as if offering me a gift. The audacity stunned me. Steal Tal, drag him away, leave me lurching from a blow to the stomach—and now here she was, or some filthy som was, some neem thing, trying to convince me we remained bound in friendship because... what, because we'd both been Tal's lover? Unbelievable!

'I love you, Nat,' she told me, and came forward out of the shadows.

‘You fucking what?’

‘I love you, Nat.’

‘I hate your dead guts.’ My screaming voice echoed and re-echoed like a bad dream of locked-up rage. ‘I spit on you. Have you got a grave? Here lies Deb Gorman, faithless bitch. No grave, I don’t think so. I’m pretty sure that plague hit so fast and furious they were struggling to get everybody into mass graves.’ The idea of it made me shiver: her body piled in with the rest, clad or naked, dusted, heaped over with heavy white powdery quicklime or burned with napalm, they’d have tried all the old methods to keep the disease from spreading. Or bodies just abandoned, corpses slammed on top of bodies, to lie in the cold and then the sun while sick animals gnawed their flesh and they slumped and sagged, worms crawling in their guts.

‘What does it matter, Nat?’ She had enough sense not to touch me. Her arms hung at her sides. ‘What does it matter where I’m buried? I’m your friend, always will be. True friendship doesn’t die.’

I forced myself to look back at her, at her semblable image. Hug her? The kiss of forgiveness, friendship renewed? Fuck that—I wanted to tear her eyes out. No, untrue—I wanted to collapse into her arms. To feel that embrace, that old loving hug I’d always known was there for me, always relied on. Her hair cascaded over her shoulder in a waterfall of fire, as it had when she was a teenager. Jesus, I knew that hair, I’d buried my face in it so often, hugging her, collapsing in giggles, stoned in the back of the car after too many tokes, too many tequila sunrises, too much sun, too much....

I took a deep breath, sat down in a seat I invented. Deb sat down opposite me, crossed her legs. I still didn’t try to touch her. What would happen if I did? Maybe my hand would pass straight through her. Maybe the neem was more sophisticated than that, so I could reach out and touch her, feel her all real and warm and not dead, not dead, not... Oh Jesus, oh hell, I wanted those days back, those days before the treachery, before she stole Tal, when she was my best friend and I lived with Tal who, I thought, loved me and was the best of buddies with my best buddy.

‘Okay,’ I said to Deb, ‘explain it to me.’

‘Tal did feel bad, believe me,’ she said. ‘He needed somewhere to stay, I had a new apartment with a spare room.’

‘Just brute coincidence, I suppose?’ Fuck, was there anything she wouldn’t say?

‘It was, honey. These things happen.’

‘Don’t honey me.’

‘You wanted too much from him, Nat. You wanted more from Talbot than he was able to give. You figured he could be your soulmate...’

‘He was. Until you butted—’

‘Nope.’ It was flat, convinced, as blunt as crushing out a cigarette stub under a heel after one last rasping puff. ‘Not in two billion years. You demanded far too much.’

‘And you didn’t?’

‘Nope,’ Deb said again, and grinned. It was the old Deb grin, the one that went with her oneword truths. Nope, she’d say, or sure, or crap or sometimes yeeha! Then she’d grin and the grin would show the slightly crooked tooth among all the straight ones. I’d knocked it crooked with a softball bat in seventh

grade. She'd never had it straightened.

'So what did you demand of Tal?'

'Not a lot. Sex. He was quite good at that, as we both have cause to know. Another body around the apartment. Someone to go out with. We didn't talk much, certainly not all that rhetoric and cultural theory crap. I never tried to reach down into his soul...'

'And he was grateful? For this failure to... to try for intimacy?'

'Sure. He said living with me was easy. No pressure.'

'Oh, that's what he got with me? Pressure?' Maybe it was true. No, fuck that.

'More pressure than he could handle.'

'And I suppose you think that's my fault?' I said. 'I suppose you think I'm a demanding, carnivorous beast who devours men.'

'Men don't count.'

'Oh, really?' I said. 'Who does count, then?'

'Me, Nat,' Deb said. 'I count, I've always counted, I always will. But I've got to go.'

'More damned evasions. You have nowhere to go, you've been dead for billions of years.'

'I'll be waiting for you, Natalie,' Deb told me, and then she was gone.

I'd never felt so agitated. I'd never felt so angry. I'd never felt such loss.

I got out of bed, dazed and bleary, had a piss, washed my face in stinging cold water, threw my clothes on, walked out of the darkness through a darker darkness into a pool of amber light where I found Hugh and Chris wolfing down pancakes and steaming coffee and orange juice while discussing preposterous physics with a gaggle of intent Thaajelomali.

'Nat, what's the matter?' my father asked, concerned. 'Come and have some breakfast. Have you been crying, honey?'

'Don't call me that!' I said between my teeth, and left them to their food and abstractions, feeling sick and unhappy and terribly, terribly lost. Miserably, I went back to the bedroom and lay on top of the bed. I woke up, and Tal turned, reached for me. Time and reality wobbled. We made love as we had in the first few weeks of our affair, starting cautiously, falling into a rhythm we both seemed to recognize, making noise, moving around a lot, coming with pleasure so fierce it verged on pain.

Lying in Talbot's arms, suffused by our own musk and the soft melodic hushing of Debussy's sea music, I said softly, 'Tell me about the stars.'

'This crystal pattern we're imposing on the Galaxy? Pretty, isn't it?'

All about us, the bedroom went velvet black, and the sky blazed its jeweled mesh, sphere within sphere, ring within ring, into milky blur at the heart stars.

I nuzzled his strong shoulder, denying to my inner dread the horrid truth that this room, this girdling sky, this embrace, all of it was nothing better than a som; our passionate sex had been approximately as

macabre as making love to ectoplasm. Distracting myself from myself, I said, 'I can't believe that shepherding a hundred billion stars into concentric shells is a task fit for gods.' That didn't come out quite right. If shoving stars around the sky wasn't a suitable pastime for gods, what was? I coughed a silly embarrassed laugh. 'You know what I mean.'

'I thought you hated talking after we'd—'

I rolled on to one elbow and punched him. 'Make an exception. It's that, or I'm off to find something to eat.'

'Gaia is building a theoscope,' Talbot's neem told me in a calm, matter of fact way. It took me a moment or two to unpack the word. I blinked, then, and shook my head, sitting all the way up.

'Like a... a telescope for seeing God?'

'More like a microscope, a nanoscope, a femtoscope. More accurately, a Titanoscope. We shall be digging very, very deeply into the fabric of the cosmos. Down, down, down.' His lips were slyly smiling. 'Would the fall never come to an end?'

I shook my head, beyond incredulity. 'You do know this is the stupidest idea I ever heard?'

He frowned. 'It enthralled your ancestors. The Indians, the Sinese and the Greeks intuited it, somehow, before they invented science.'

'I told you millions of years ago, Horace old chum, I have little Latin and less Greek. As for Sanskrit and Mandarin, nada. Spanish and French—' Thumb and forefinger held half an inch apart. 'Enough to get by in the Zona Rosa in Ciudad de México and the Left Bank coffee shops.'

'Let these show, then.'

Against a dark background emblazoned with chalices of stars, a balding fellow in a toga and sandals stepped forth, eyes opaque, hand upheld. In a cutting, clear voice, he told us: 'From the Egg of Night, floating upon the breast of Chaos, issued forth Erebus, the Earth, and her consort Eros, Love.'

Possibly he was speaking ancient Greek; it sounded clear as a bell to me. I no longer trusted my senses, nor my mind itself. 'Eros, eh?' Caught by surprise, I had tucked the sheet up to my neck when the old guy appeared, or his appearance appeared, but I let it fall and brought Talbot's hand to my breast. 'Always a good earthy start to these unexpurgated fables. I hope you're not about to tell me that modern science has revived—'

'Silence, young woman,' the orator snarled, turning his head and giving both of us a rather fierce blind glance. 'From these two ancestors ushered forth the Titans, first children of Heaven and Sky, and from these in turn were born others of their own kind. Only then were birthed the gods, who rose up against their Titan parents.'

Looming figures stood in a sullen red glare, closing in to encircle our bed. One by one they spoke their names like thunder, and I felt a deep chill pass into my flesh. Not fun and games any longer.

'I am Chronos, Time, also called Saturn.'

'And I, Ops, the all-Mother, known by some as Rhea.'

'I am Prometheus, whom you humans know for the gift of fire.'

‘And I, his brother Epimetheus.’ They were tall as the sky, horribly knotted with muscle and scars.

A stench of volcanic ash; ten others stood there in literally stygian gloom, and gave their names: Oceanus and Thea, Coeus and Themis, Crius and memorable Mnemosyne, Hyperion and Phoebe, Iapetus and Tethys of the seas. I felt no further urge to laugh, let alone snigger. These were great and terrible beings, however imaginary.

‘What happened to the Titans?’ I asked Talbot in a small voice, clutching his red-fuzzed arm. He tightened the other arm around me, shrugged, waited in his own silence.

‘Defeated by their ungrateful children, the gods,’ the orator informed us both, ‘sunk beneath the ground, they were imprisoned forever in the underworld. There they remain to this day, heard by none, racked by suffering, in immortal pain, torn but daily reborn to renewed anguish.’

Talbot released me, took my hand, looked away when I tried to search his face. “‘We know that the whole creation groaneth,’” he said in a harsh, unpleasant voice, “‘and travaileth in pain together.’” I recognized those tolling words; my father had spoken them, quoted from another old book of sacred fable, at Grace’s funeral.

‘Oh shit,’ I said, and to my horror found that I was nearly in tears. Poor Grace. Poor Titans. After a long moment, I said, ‘That’s only myth, surely? A primitive fairytale. I mean, cultural relativism is one thing, but please tell me it isn’t some allegory of a real—’

Pungent smoke wrapped the writhing, agonized Titans, locked them back into imprisoning darkness. The orator withdrew. Talbot sighed.

‘I suppose when you girls were kids, Hugh must have told you how the world was born?’

‘A spinning cloud of gas around the Sun, right?’ In fact it had been Grace who first told us that enchanting story.

‘Farther back, Natalie. The cosmos entire, space and time and energy positive and negative. Flung into existence out of non-being, with the first instant of time, in the Big Bang.’

‘Oh yeah, that. Well, of course. Everyone knows about the—’

‘Gaia, the gods, we singularity gods, were not born until long after mindless chemical life struggled forth upon the planets and comets,’ the Talbot neem thing said, and I was reminded yet again of its true nature. ‘But our true first parents, the Titans, were hewn by evolution from Chaos in the earliest eternities of the very first microsecond of the Big Bang.’

What? What? Had he meant all that stuff literally, after all?

‘Can you understand this mystery?’

‘No.’ I squeezed my hands together tightly.

‘It is not so hard to follow. So great were the energies, so tightly packed the nearly closed new-born universe, so very swift the foldings and unfoldings, that billions of years of virtual time were compressed within its first flaring instant.’

All of this abruptly flamed about me in lurid imagery, a fireworks display out of Dante. Were they imposing this understanding directly upon my mind, like the language machine of the True Knowledge people, or awakening lost memories from childhood? The cosmos peeled open to my inward vision.



Ignition, followed by complication as the first pure unity of all forces cracked apart in the cooling, outward rushing cosmos. Gravity splitting away from the strong nuclear force, the weak force, electromagnetism, refrigerating and shredding reality. Entangled membrane sheets, lonely particles swallowed up and spat out as the earliest blazing heat cooled toward darkness. Yes, it came back to me, I'd seen it on a dozen Discovery programs. I'd heard the story told to Suzanna and me a score of times by Hugh when other children our age were being taught the pretty fantasies of Genesis. It had never seized me by the scruff of the neck as it did now; yes, now it shook me with its grandeur. But after all, Hugh and Grace had not known the real story, if this was indeed a tale to be trusted. Gods, evolved from heat and noise in the first trillion virtual years that had been squeezed into that first minute or second or tiny fraction of a second of the new-born universe.

I stood up, shaking. 'What happened to them?'

'In the great cooling that followed, when light collapsed into matter, the first great minds became trapped in the fractal ridges of this paralyzed new order. Deathless they were but immobilized, stretched across accelerating billion-light-year skies. Those shrieking Titans, Natalie, those Bright Angels, those gods before the gods—they're there still. We can't see them yet, but we know they are there.'

I cringed, and my skin felt very cold.

'They suffer and have no voice to scream. The Angels fell from the great glowing heat of their birth into a terror of frozen spacetime, and as they placed their last locked impress upon it, forged our geometries and our deepest yearnings. It is the echo of their last silent howl we hear ringing through the voids of stars and galaxies and all the greater darknesses between.'

I pressed my hands to my ears, unable to bear the dread he spoke, unable to turn it to a joke, unable to resist this appalling epiphany of pain.

'They're... still there? After all these eons, still suffering?'

'It is their agony, above all, that creation groaneth under,' the Talbot neem said. He stood now on the far side of the room, surrounded by a halo of stars within stars. 'Our first and final duty is to find them, to recover them from confinement, to end their suffering at last.'

I did laugh, then, a painful lacerating bark. 'Oh, good, so that's what humanity's goal has always been. All the Rabbis and Popes and Mullahs had it exactly wrong.' I laughed again, and it hurt my throat. 'Fuck. Wonderful. We were never meant to seek redemption in God.' In my mind, I saw a huge, parodic, red-lettered GOING WRONG WAY sign catching the rushed headlights above the highway to eternity. 'Oh no, it's up to us, poor damned dupes, to redeem the gods.'

Hugh was calling my name. I awoke, dazed and bleary and confused. Hadn't I just done all this? Apparently not, my bladder was tight, so I did the bathroom dance, flung stinging cold water on my face, dragged on my clothes, found him sitting before a laden table of pancake stacks and steaming coffee and orange juice. Ferdy was curled on the Chesterfield, his small symbiont rider looking pink and pleased with itself.

'Oh my goodness, Ferds!' I crossed the room in a rush, seized the dear old pup by his ears, nuzzled his face. He drew back warily, and his partner uttered a shrill whistle of disapproval.

'Good morning, Natalie. It is time for you and the old one to go forward.'

I jerked back as well, offended. Hugh poured coffee, handed me a cup.

‘Yes, time for us to go, I’m told, once we’ve had a bite to eat. They’ve given us some useful equipment.’

‘What’s our part in all this?’ I asked the pup, angrily. ‘Why aren’t we allowed to stay here with you?’

‘The gods required it,’ the symbiont piped.

‘Oh crap! I’m sick of all this gibberish about gods. There is no God, and none of your wretched Grand Ones and Gaias come within light-years of that delusion anyway.’

‘Once there were no gods,’ they admitted. ‘The universe is just an extrusion from an earlier bubble, and that one from another prior to it, and so on unto eternity—’

‘And here’s where you smuggle in your Power Greater Than Ourselves, right?’

‘Not necessarily. Whereof we cannot speak, thereof we should be silent.’ And it was, just long enough for me to draw a breath and start an angry rebuttal, and then the symbiont cut through my words. ‘The post-Singularity beings require it because of the vacuole. The 6-brane discontinuity is a flaw in the crystal of the universe.’

‘Oh,’ I said satirically. ‘Oops.’

‘No, no. This is not a cause for blame or contrition. Without this vast hyperdimensional string running like gristle through the flesh of the cosmos, we should not have possessed a constant yardstick, as it were, for our grand purposes.’

‘Well, it can’t be that hard to build one,’ I said in a practical tone. ‘After all, Hugh managed, and he’s all thumbs.’

The Ferdinand-symbiont composite bared doggy teeth at me in a disturbing parody of a human smile. ‘One only per universe, alas.’

‘You’re shitting me.’ I glanced at my father; he shrugged modestly. ‘No ancient aliens whipped one up four minutes after the Big Bang? What about the grays in their UFOs?’

‘No grays, sorry,’ Ferdy said, the scary grin broadening. ‘And the Titans were already locked into their terrible durance.’

‘So we’re it, eh? The string that ties the universe together! I always sensed I was meant for greatness.’

‘Oh, yes, Natalie.’ The dog gave me a look of awful distress and... admiration, I suppose. ‘And so you must go on. To the end of time.’

## Twenty-One

In the year thirty billion plus, the  
Sun was gone.

Hugh had been right. When the green flash had cleared, and the splitting headache vanished as quickly as it always did, he stuck out his instrument probes and found that the world was a frozen ruin. The display showed stars scattered every which way again, but no Sun in the black, airless sky.

‘It’s unraveled again,’ I said, feeling as if my nerve endings were wrapped in cotton wool. ‘They let their god-o-scope fall apart.’

‘Maybe it did its job.’

There’d been time enough. Thirty-four billion years into the future, the Sun was not just over the horizon—it was gone, quenched.

‘A star like the Sun only has a lifespan of nine or 10 billion years,’ Hugh explained to me, as we sat appalled inside the weirdness of the amethyst blue place. ‘It was already halfway used up when humans first evolved. Now it’s been a cinder for 30 thousand million years.’

‘It just went out?’

‘Much more dramatic than that,’ Hugh said. ‘It grew hotter and hotter for a long time, and eventually it used up all its hydrogen fuel and started burning helium. That must have been a terrifying sight if anything remained here to watch—there’d have been a flash brighter than any creature with eyes had ever witnessed.’

‘There weren’t any eyes left to watch, though,’ I said, my own eyes prickling.

‘Not on earth, I’m sure of that. But other beings on other worlds around other nearby stars must have seen the great flashlight go pop. Then the Sun inflated into a red giant—a big fat red monster of a star that burned for another billion years before it collapsed to become a white dwarf, no more than a remnant of its former self. By now it must be extinct.’

‘So why are we still here? How come the world wasn’t burned up?’

‘The Sun was just a quiet little star,’ Hugh said in a melancholy voice. ‘Even when it flamed out, it wasn’t important enough to destroy most of its children. But it must be bitterly cold out there.’

I was shivering horribly. Hugh hung his old leather jacket over my shoulders, and I huddled into its familiar, comforting odors. We waited in the blue place, hoping against hope that Grace would make herself known to us. After a day and a half of nail-biting and grouchy silence, I went for a long tramp. I took my parcel of old letters with me, and a flashlight to read them with, and a backpack with two stale sandwiches and an unopened plastic container of orange juice from the 21st century. Under a jutting ridge of crystal I lay down, arrayed my possessions about me after eating one of them rather gloomily and swigging some juice, put the pack under my head, and took out Tal’s letters. I started in again on the one I’d begun in my old room, post-plague. I’d never got to the end, what with the Pox Cops and all, and now when I did read those closing words I found myself weeping without constraint.

I lie here under the cats, thinking of the many faces of Natalie. There’s a crisp and snappish one, and a whimsical girlish face (standing in your long red nightdress, at the top of the stairs in your parents’ house, at five in the morning after I stayed over and we first slept together, wondering whether you dared to lift it wickedly in a quick flash, and then Suzanna blundering out of her room alerted by some creaking of the steps, and we both laughed with muffled, forestalled embarrassment), and a soft and lovely face from an inch or two away when we’re fucking, and the competent M.A. student Nat moving fast in the corridor with batches of cultural studies research stuff to xerox, and the surprisingly masterful T.A. down the front of the classroom leading the babies through their first taste of Foucault and hideous Lacan... This has

nothing to do with doting, for as you know I'm made of sterner stuff, but it makes me realize how readily, usually, we flatten all these aspects into a phony unity, a "self" filed along with a name.

"There are some wonderful, wholesome changes about to occur," you shouted back to me as you went through security before getting on the plane to Paris. It'd be nice, wouldn't it? Down with neurosis! Up with good sense and drunken love! Can it be done?

Love and smooches, pretty.

He had still thought I was pretty, back then, or at least had retained the basic wiles to say so. No, that was unfair. I wiped my face with the back of my hand, tucked away the letter, sat up and ate the second sandwich. Wonderful changes, ha! Poor confused Talbot, so very dead now, his very atoms scattered across the heavens or evaporated. Poor silly Natalie, lost in limbo. But he had loved me once. And I had loved him.

I got up, made my way back to Hugh. The blue zone just went on and on, the weirdness lurching and bumping and making my ears ring if I moved too quickly, but there was nothing else to see except more blue waste land. I tramped back and found my father staring at the remote control.

'The next jump is the critical one,' he told me candidly. 'If they've stopped or reversed the expansion, closed the geometry...' Hugh's voice trailed off. 'If the universe is still expanding at an accelerating rate,' he said, after a while, 'the earth should still be here beneath our feet. But not forever.' He was regarding the remote as if it were a snake poised to bite him.

I was scared to death, but I forced myself to face it, horrible as it was. We would go on and on and again on, as Grace had instructed us to do, leap after leap. Finally every single blessed thing would fall apart, evaporate, identity lost. When at last we released the vacuole, or it collapsed, released our reprieved lives, the very subatomic particles we were made of would become literally the last things in all the cosmos, and in further trillions and gazillions of frigid years even their feeble few kilos would have evaporated to nothingness. That, I decided, even more than the release of the trapped First Minds, had been the horror driving those calm, tremendous minds. The death of everything that had ever existed. Nothing but empty, meaningless space, expanding forever.

My legs gave way, and I sat down with a thud in my canvas director's chair.

'Mom wouldn't do that to us,' I said.

'I suppose she might not have known. Her field was math, not physics.'

'She knew more than you and me,' I said fiercely. 'She knew enough to get Zanna hitched to golden boy, and to set the old pup up with some friends. Come on, Dad, don't give up now. Push the fucking button.'

'Such language, Nat,' my father said with mock ferocity, and we smiled wanly at each other, and he pushed the button.

Half a trillion years.

'Not far enough, evidently,' Hugh told me, after we'd waited for ten minutes in the awful still silence of crystalline blue.

'What were you expecting? Horus flapping its wings? A message from God in silver lettering?'

My father laughed, a little hollowly. 'Something like that.'

The bit-flip display, bringing us information through the permeable aperture of the 6-brane shell, showed a sprinkling of dim red fireflies. As Hugh tweaked and enhanced the image, more and more came into registration, but they were coals merely, from a dying furnace.

‘Are those things... stars?’

‘Red dwarfs, smaller and much feebler than our own dead Sun, Natalie. Because they burn so slowly, their lives are greatly extended. I believe those last stars will persist for another trillion years. Unless, of course, all the physics of the gods is wrong—and if I were a betting man, I’d gladly accept that wager.’

So the great hot stars had burned themselves into novae or exhaustion, and the black hole-herded gases of the cosmos sucked up to give body to generation upon generation of stellar children, and those had grown, aged, perished. My father spoke like man uttering a dirge, in a voice drained of emotion.

Out of the nothingness, then, heart-stopping and appalling, a different voice spoke. It was vast. It was terrible. It filled our heads like a remembered echo of thunder.

THE OMEGA DENSITY PARAMETER HAS FALLEN PRECIPITATELY, the Voice said. THE LAMBDA PARAMETER GROWS EVER MORE IMBALANCED. COSMIC ACCELERATION CANNOT BE RESISTED, LET ALONE REVERSED.

‘Too loud,’ I cried, jamming my hands over my ears. But the Voice was not being heard by our ears; its utterance was engraved directly into our brains. When it spoke again, though, the buffeting was more endurable.

YOU CANNOT REMAIN HERE. THE TITANS ARE RELEASED. THEY AND THE GODS ARE LONG SINCE GONE INTO THOSE MORE ELABORATE REALMS WHERE THEY MIGHT LOVE AND THINK AND PLAY IN FULNESS. SOON ALL WILL BE DRAINED AWAY, THE REMNANTS FLUNG APART BY COSMOLOGICAL EXPANSION. THE LIGHT CONE CLOSES UPON THIS COSMOS.

‘Do you understand what it’s saying, Dad?’ I yelled, frightened and yet strangely exalted, tremblingly giggly. It really was like listening to a weather report from a deity, or someone of much the same standing.

‘If it’s right, there’ll be no end to the universe. To this universe, at least. Perhaps others exist, perhaps infinite bubbles have peeled away, inflated each time a black hole forms from a collapsed star. I think that’s what it’s telling us. Most of the post-Spike minds did not bother moving stars around for pious purposes. They built themselves new homes with higher membrane dimensionality, and moved right in.’

‘Cosmic real estate,’ I said, nodding and still giggling. ‘Buy the worst run-down place in the best street and fix it up.’

‘So it seems. That’s where the Spike entities go, don’t you see?’ Suddenly he was pleading with me, but also with himself. This was plainly news he did not wish to hear come out of his own mouth.

‘Well, I guess that’s what the Voice meant.’ I struggled to get hold of the awful concept. It was too big, too terrifying to bite down on. ‘They rolled themselves up in the extra dimensions and went where the gravity stuff goes?’ He said nothing, and after a moment I added, ‘And that’s what happened to Mom, too?’

‘If she was uploaded, and if the post-Singularity minds went into higher spaces, yes, darling. She’s gone. More gone than we ever could have imagined.’

‘No,’ I said, although I had been the one who insisted that she was dead, fallen to dust in a lost time before time out of mind. ‘The Voice told us to—’

And of course then it spoke again, as if it had been auditing our slow unraveling of the world’s workings, its ebbing engine.

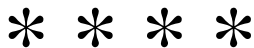
GO FORWARD NOW, the Voice instructed us, pitilessly, it seemed to me. Something like warmth, though, entered its majestic presence. NOW YOU MUST FIND ST. IVES.

With a mad surmise, joy rising inside me like blood to a flushed face, I cried out, ‘Ferdy?’

A PART OF HIM. WE LOVE YOU BOTH. GO NOW.

Hugh pushed the button.

Green light. Pain. We were in the year 7.369 trillion.



Cool, huh? A year so shockingly distant that you need decimals to say it.

Hugh and I stared at the instruments. The bit-flip camera, when he poked it through the wall, sent back a few seconds of absolute blackness, and then packed up. I think the lens froze to near absolute zero, and cracked. When we dragged it in through the phase-shifted interface, it looked as if it had been hit by a hammer. The hammer it had been hit by was nothing more or less than the empty, brutally cold universe.

‘Yes, still expanding,’ Hugh said with gloomy satisfaction.

‘So the cavalry failed to arrive and stop the gravity leaking out?’

‘I don’t know, darling. Perhaps that was never their intention. Are you hungry?’

Trillions of years and ten minutes ago, I’d managed to get down those two sandwiches. ‘Couldn’t eat a thing. Were you hoping we’d get snuffed out in a resuscitated Big Crunch?’

All those wrong theories. The guy Hugh liked to talk about, Frank Tipler, had hoped that the immense energies of a Big Crunch would be used to create a cosmic Omega Point AI, a benevolent deity that would persist forever even as time closed down and the universe perished. By one measure time would end, but by its own clock that duration would be sliced into ever briefer shavings, subjectively equivalent. Tipler, we could now plainly see, had been wrong—had been looking in the wrong direction. That virtual eternity, that Omega Point—Alpha Point, rather—had come and gone in the very first intense, fleeting instants at the birth of the cosmos.

‘Not snuffed out.’ Hugh shook his head, gave a shuddering sigh. ‘Far from it. I’d held a small hope that the universe might have been rebuilt and inhabited by a kind of emergent deity—as you so perceptively and sardonically remarked, my dear, before we met the real god.’

‘The real dog,’ I said.

‘Just so.’ He smiled and took my hand, squeezing it tightly. ‘A cosmic consciousness that somehow managed to make room for our own dear dog. I could become fond of a god like that.’

I looked at him, words whirling and unspoken in my head, filled with memories of the Voice, of the

pseudo-Talbot, of the instructional voices of those hallucinatory mice. Ultimate craziness. But what could be crazier than imprisonment inside a blue furry place seven trillion years in the future?

‘You still think Grace was part of the god mind? And that it’s still out there somehow? Dad, the fucking stars are all gone.’

‘Yes, I know. Space itself is now opening faster than the speed of light. Cosmic acceleration will have driven the last of the red dwarfs beyond the light-cone horizon, if any are left. Yet I was sure...’ He trailed off. ‘The lambda of god.’ Abruptly, he stood up and drew out the remote. ‘There’s only one way to find out,’ he said in a madly resigned, sensible voice. He pushed the phase-shift key and without another word or a glance back at me he set off briskly toward the blue fuzz that was the inside of the lava wall protecting us from the dead universe.

For a moment I watched him dwindle in the strange space, then understood completely what he meant to do. ‘Daddy,’ I screamed in wild despair, and started to run after him. He vanished through the wall. I stopped just a centimeter from it, throwing my arms up in front of me. It was instant frozen death out there. My eyes and skin would turn into icy rock, just as the video lens had done. I’d fall over gasping for air in the void, and be dead before I hit the ground. But what else was I supposed to do? Hugh was gone. Grace long, long lost to dust, even the very dust gone as well... And Suzanna, Barong, their darling baby Grace Natalie—babies plural, no doubt, after a few years, and then a whole enormous imperial lineage of their seed—even my dear old pup... abandoned trillions of years in the past. I pulled his jacket tightly about me, steeled myself to push through the barrier of the spacetime constriction and fall frozen and dead at Hugh’s side—

He stepped back through the wall, grinning in happy astonishment.

‘I was right,’ he told me, taking my hand. His bare skin was a little cool, but not absolute zero cold. ‘Grace is waiting for us. Your mother is outside, darling. Come on, shake a leg.’

Totally insane.

But then again, he wasn’t dead.

I took a deep breath, closed my eyes tight, and went with Hugh through the interface.

I opened my eyes and for the briefest instant felt a dizzying vertigo. The earth had gone. The stars were gone. I couldn’t even see Hugh, just felt his fingers holding mine in a firm, confident grip. Then there was a pearly glow and Mom told me, ‘You’re looking well, darling. There, there, it’s just the shock.’

I suppose I fainted, but how can you tell in total nothingness? A long dizzy moment later I was sitting on a wicker chair at a wicker table topped with plate-glass, and Hugh was pouring Grace and me a flute each of champagne. A tall, icy glass of rich, glowing orange juice also sat before each of us, and a salver of open kibble-bread sandwiches with low-fat cheese and sliced celery. I couldn’t take my eyes off Mom, so I reached for a slice with one hand and the OJ with the other and got them to my mouth and chewed and swallowed with a gulp that hurt my throat and sipped some of the chilly OJ and swallowed that as well, and little flecks of freshly-squeezed orange clung to the roof of my mouth. I put down the glass and reached for the flute, washed away the pulp with a swig of wonderful champagne.

‘You must go on by yourself,’ Grace told me. ‘I’m hoping to get you home. But it will take a little while.’

‘She’s a big girl now,’ my father said, ‘I’m sure she’ll manage.’ He raised his champagne flute and clinked the crystal against hers, and they drank, and then to my surprise he stood and turned and flung his glass at the hard dark wall of lava that loomed from the soft white glow at our back. The glass shattered,

spraying out.

Grace smiled, rose as well.

'A romantic gesture, Hugh! How I love you, my darling,' and she too flung her glass, and it smashed into pieces, and she reached across the table to kiss Daddy in a deep, hungry, intense embrace. I looked away, a bit embarrassed, and then she came around the table and took my hand.

'You have been very brave, darling,' she told me. I could see her eyes, but now I can't remember what color they were. Isn't that strange?

'I'm scared,' I whispered.

'I know.' She took me into her arms, and I was taller than she was but she hugged me as she had hugged me when I was a little girl and woke howling in the darkness with a nightmare of monsters and loss. I rocked for a minute in her warm, lovely, gathering arms. 'I can't give you back everything,' she said, and perhaps she was crying too but I can't remember her eyes, I can't, 'but there's a chance.'

'How?' I said. 'Everything here is... dead.'

'Not dead, not at all.' For another moment she crooned, rocking me. 'This universe is complete, a perfect work of art. But art does not cease, and life will never allow the universe to stop. Do you remember Dolly?'

Dolly? Who? Oh.

'The first cloned sheep,' I mumbled. 'They made a baby sheep out of a cell from a dead sheep's udder's DNA, right? And they grew it to term inside the womb of another sheep.'

'Think of the vacuole as the womb for a new universe,' Grace said, and I saw Hugh nodding with immense gratification as he understood at last. 'You'll be the DNA for a new universe, Nat, you and your memories. We're folded within you, darling. If we've got this worked out right. There'll be some changes, since even single-egg twins grow dissimilar in the womb. But you'll be home.'

'How is that possible?'

'Don't tell me you've forgotten your beloved Samuel Taylor Coleridge.'

What? The Ancient Mariner, c'est moi? I shook my head in a confusion of sorrow. Words appeared in the air, graven in Gothic script and inlaid with gold:

The principle of the imagination resembles the emblem of the serpent, by which the ancients typified wisdom and the universe, with undulating folds, for ever varying and for ever flowing into itself—circular, and without beginning and end.

'Oh. Okay.' I still didn't see, not really. I gazed at her in perplexity.

She moved aside, then, without moving, and I could smell her perfume. 'Go, now.'

'All right,' I said, empty and joyful all at once, and Hugh, Father, Daddy, kissing me goodbye, said, 'I love you, sweetheart,' and then I keyed the phase-shift and went alone back into the blue place.

I stood there for a long moment, looking at the three empty tents, and the small portable toilet at the back. Between Zanna's pup tent and mine was Ferdy's bowl. It was empty too.



I held the remote to my heart, and pressed the jump key.



Creation—

Something enormous happened.

The Bright First Angels stood all around me, and I was in their midst, an infinitesimal fleck. Yet they knew me, held me in their love and gratitude, kept me from the terrible gale of time tearing the cosmos asunder. I watched them at their sport, agog. They danced their splendor, their misery: the agony and guilt they'd borne to see a botched universe hatched from chance and suffering and greedy stupidity, the glory of its recovery into rapture.

One lay upon Its broad back, laughing mouth wide within a white beard great as the sea, masturbating, spurting god-spume into the emptiness where its droplets spun and tore light from darkness, were worlds and stars.

One in jester's cap and bells juggled clustered stars, riding a monocycle with a galaxy as its wheel.

Four coupled in every combination, mouth upon nipple, hand squeezing hand, eyes gazing with mirth and glazed with longing and dazed in passion, tops and bottoms, backs and fronts, ups and downs, and it made me horny to see their sport; I envied them.

One came stately down the helix stair, bearing a heaventree of stars, darkmirrored and razor-slashed by entropy, blessing gravely thrice the roaring tunnel of time we fled through.

The Titans danced the end of all things, and their beginnings. As the years of the surging cosmos passed from trillions into numbers impossible to utter—10 followed by a hundred zeroes, by a thousand, by a trillion—cold and quiet settled upon the plenum we moved in. Yet nothing moved. Very early in this dreadful, unstoppable expansion, the stars had flickered and gone cold. Galaxies like ash and dust fell together, burned for vast ages in even vaster conflagrations of collapse into blackness, fled apart. All the small strings unravelled their song back to a single drone, which deepened to a dirge, a long hum, a vacant hiss, and then to silence.

I waited in eternal void as the Titans wept and laughed. I meditated on time, in the endless timelessness. My dazed, crazed thoughts echoed like stupid bird calls, birds trapped in a locked room battering themselves against glass. I heard the Titans shout the hundredlettered name of all things:

Ullhodturdenweirmudgaardgringnirurdrmolnirfen rirlukkilolkibaugimandrodrererinsurtkrinmgernrack inarockar!

I cried out to the Bright First Minds, and to all their children: 'Farewell! I love you!'

They wrapped me in their cold, cold dark embrace, and told me: 'Till thousandsthee!'

They gave me the keys.

I opened the last lock.



Something enormous happened.

—ended.

It was evening when I stumbled out of the vacuole constriction and found myself inside the garage. Its doors were wide open, and the Subaru was parked just in front. (The Subaru? But Hugh had sold that three months ago...). Behind it was a car I didn't recognize, small and sporty. The lights of the house were on, casting oblong shapes of the upstairs and downstairs windows on the grass. With a very loud pop, the vacuole closed itself away behind me, folded up into the mathematical nothingness it had come from. I dropped the useless remote and ran out into the garden.

Someone opened the back door. 'What was that?' called a voice I couldn't quite place. 'Is that you, Natalie?'

I stared around me in complete shock and disbelief. The house really was back. Beyond the fence, Mr. and Mrs. Mahoney's house was still there, or there again. In the sky, moving gracefully through streamers of cloud lit by the city's upward glowing lights, were the two moons.

...Two moons?

I tottered into the house, almost falling. The woman caught me and held me. I recognized Mom's perfume.

'For heaven's sake, where have you been? Deb's beside herself.'

Hugh strode into the kitchen from the living room, where the TV was blaring, looking alarmed and relieved all at once. 'Nat! You had us worried. Deb said you were meeting her here for family dinner, and the poor woman's been cooling her heels with the monster for more than two hours. And what was that noise?'

'I— This is—,' I said helpfully, and slumped into my favorite chair. 'Could I have a glass of water, please?'

'I thought that was a familiar yelp,' cried a friendly, mock-accusatory voice. Deb's red bob cut had grown out, rather attractively, in fact, and she was wearing chinos, sleek black leather shoes, and a black sleeveless muscle tee-shirt with big blocky red letters across her breasts:

YOU'RE UGLY

I'M BUSY

What did the bitch think she was doing here?

'And where's Tal?' I asked bitterly, head spinning. 'Skulking outside in the car, I assume?'

'And who the hell's Tal, you bad girl?'

She had her arms tightly around me by then and to my utter shock kissed me full on the mouth. Hugh looked away, coughed delicately. Deb's tongue darted into my mouth, did something astonishing. I was shocked out of my wits and simultaneously, to my amazement, liquid with a rush of desire. I pulled away

from her, mortified.

‘What do you mean, who’s Tal? Talbot...’ I trailed off. She was frowning at me with sincere bafflement.

‘I don’t know anybody named "Talbot", honey. Wait a moment, you don’t mean your old theory professor? Didn’t he try to jump your bones for extra credit? That prick has been in Paris as long as I can remember. Why, has he gotten back in touch with you?’

‘With me? Deb, what the hell are you... He did nothing of the kind!’

‘Ah, Nats, victim of Repressed Memory Syndrome now, are we?’ She gave my shoulders an affectionate shake, but was clearly disturbed. ‘No, I’m serious, he isn’t back here pestering you, is he? We can get the fuck for harassment.’

A huge stocky lizard ran in through the open back door, short tail extended behind it, and started licking my dangling hand with great excitement. I screamed, of course, and tried to climb on top of the kitchen table.

‘Ferdinand,’ shouted the woman who wasn’t quite my mother, ‘leave the poor woman alone. Natalie, what in heaven’s name is the matter with you?’ She looked at me with new concern, and Deb was white with shock. ‘Are you all right, darling? Has anyone—’

And then you came into the kitchen with your baseball hat on backwards, bouncing a basketball noisily off the floorboards.

‘Yes, Ferdy,’ you said teasingly to the lizard, grabbing it by its short frilled neck and dragging it away from me, ‘leave her alone, you never know where she’s been.’

‘Take the animal outside, Oswald,’ said Hugh, ‘put that damned ball away, and stop harassing your sister. Can’t you see she’s upset?’

I climbed down off the table and brushed some crumbs off my jeans. My head was reeling, but the friendly odors from a pot on the stove were making my mouth water. I hadn’t had a proper home-cooked meal since... well, in several trillion years.

‘You’re going to have to tell me all about your little... adventure,’ you muttered darkly in my ear as you passed, hauling our pet outside. I just stood there looking at everything familiar and everything wildly different. After all, I’ve never had a young brother before. And Deb, of course. You know, I do think I’m properly in love. At long last.

It’s taking a while to get used to it. The television news tonight said that American doctors at the Centers for Disease Control in Atlanta have found a vaccine for the Manila flu that broke out recently in the Philippines. There are moderately reliable rumors on the Internet that it was an escaped military prion, just barely nipped in the bud. Hugh can’t work out where I found an exact copy of his old leather jacket. I can’t for the life of me figure out where the other Natalie has gone, your Nat. On her way, somehow, into another, reprieved future? Grace would not have allowed that, I think, or found it necessary. Memory catches me, plays me tricks. Repressed memory? Ha! Doubled, redoubled. We’re merged, I think. What Horus told me, in that room of echoes: dual paradigms. Lattice and membrane, now and then, Nat1 and Nat2. Aporia city.

The Grand One? The Gaia mind, woven together belatedly, maybe, by our mother’s sweet nature? I’ve puzzled over that too, Oswald. I think that this time, in this reprised cosmos, the Spike will arrive at least a little later, without the hysteria that broke the coding, the mind, the soul, of its superintelligence. I’m

hoping people get a chance to build a benevolent AI system, one that won't need repairing. Perhaps this time it'll take less time to find and free those other suffering First Minds locked into the texture of reality. I don't know. I have hope, not faith. Yes, you brat—and love.

Oh, and I've hidden the remote somewhere nobody will find it, not even you, smartypants.

Okay, I'll admit it—you can be a pain sometimes, Oswald, but you make a good listener.

I think I'll like it here.

## **Biography**

### **Damien Broderick and Rory Barnes**

Damien Broderick's award-winning novel *The Dreaming Dragons* is featured in David Pringle's *SF: The 100 Best Novels*, and was chosen as year's best by Kingsley Amis. In 1982, his early cyberpunk novel *The Judas Mandala* coined the term 'virtual reality'. His recent books *The Spike* and *The Last*

Mortal Generation have been  
Australian best sellers. His  
website is at  
<http://www.thespike.us>.

Rory Barnes is the author of ten novels for both adults and teenagers, five of which have been written in collaboration with Damien. His website is at <http://users.bigpond.net.au/rory.barnes>.