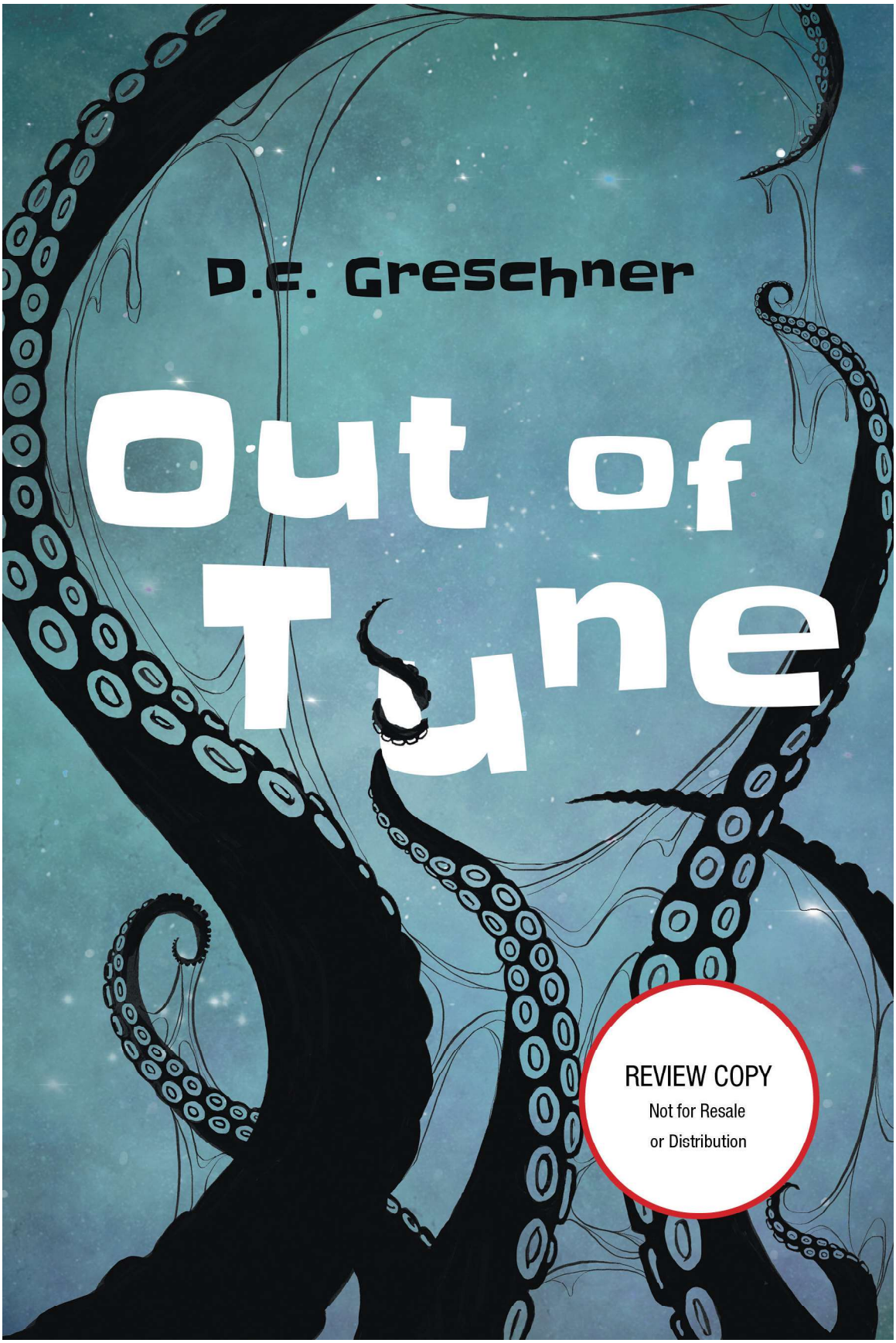
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by

D.C. Greschner

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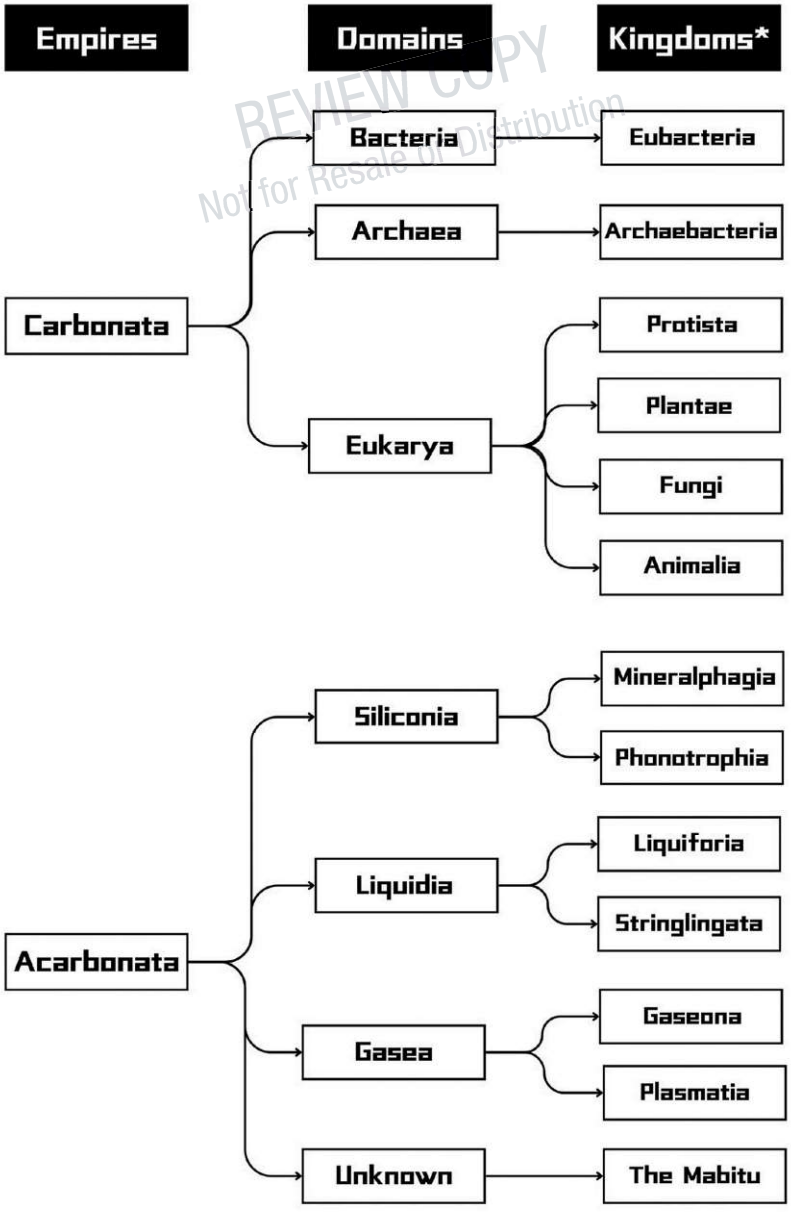

*Note: Figure 1 does not include all kingdoms of life, only a select few examples.

PROLOGUE

The tank-like doka bug[1] wheeled over the snaking roots and loose soil of planet Orn with an air of pomposity. Its heavily-armoured body easily bulldozed through the rough terrain—rough for a centimeter-long beetle-like insect, anyway. Unlike an Earth beetle, the doka bug had evolved specialized appendages that acted as toothed wheels surrounded by a membranous tread, allowing it to plow easily through the ornian landscape. Its exoskeleton consisted of several layers of chitinous plates, which offered nearly perfect protection against predation. Because of this, the doka bug roamed around with complete confidence—some might even say arrogance.

True, it was blessed with evolutionary gifts that rendered it highly adapted to the natural environment on planet Orn. However, the environment had changed dramatically in recent years, and perhaps the doka was not quite as well-evolved as it thought. In fact, there was a distinct possibility that its inflated ego was no longer merited. Oblivious to this notion, the doka bug trundled along, hoping to happen upon a suitable mate. It had been trundling for quite some time—forty-two days to be exact—nearly the entire life expectancy of the tiny creature, and in all that time, it had not come across a single specimen of its own genus, let alone its own species. It was running out of time to pass on its superior genes to a brood of lucky offspring. Of course, the doka bug's simple nervous system did not enable it to form such complex thoughts, but its instincts hinted at a vague sense of urgency.

Perhaps it was this sense of urgency that motivated the bug to venture impressively far from the habitat of its hatching, unaware that the stalks of treep[2], normally about the size of a pond reed, were growing larger and larger. So large, in fact, that even the doka's perfectly designed tread was beginning to struggle over the thick roots and runners. It was only a matter

1 *Mesoarthropoda doka:* Empire *Carbonata,* Domain *Eukarya,* Kingdom *Animalia*

2 *Phragmites ornean:* Empire *Carbonata*, Domain *Eukarya,* Kingdom *Plantae*

of time until the bug got stuck, and that is precisely what happened. Wedged between a root and a stalk, the doka found itself unable to continue forward. It tried several times to spin its wheeled appendages, but the root was too smooth, and the tread spun around in circles, unable to gain traction. But would this genetic feat of motility be so impressive if it could only move in one direction? Certainly not. Once it accepted its inability to move forward, the doka began to reverse, and was delighted to find that the tread caught, and movement was once again possible. Proud of its accomplishment, the bug continued in the reverse direction as if to show off its conquest over nature.

It wasn't long before its overconfidence backfired. As it were, the bug had been reversing up the stalk of a very large treep plant and was getting further and further from the safety of the ground. The size of the stalk was such that its normally tiny protrusions were large enough to be gripped by the doka's tread. However, as the doka climbed higher and higher, the stalk began to taper, as did the size of the protrusions. Eventually, it reached a point where they were too small for the tread to grip and the doka lost traction. Before it could process what had happened, and with the force of gravity on Orn being similar to that of Earth, the bug began to slide down. Reflexively, it stabbed the stalk with its proboscis to hold itself in place. Normally, this behaviour would have been yet another useful adaptation in the doka's arsenal, but things had changed on Orn and the giant treep was no product of natural selection. The instant the proboscis pierced the outer layer of the stalk and contacted the plant's inner juices, the bug's tiny body, armour and all, disintegrated instantaneously.

That makes seventeen today. The farm worker[3] had watched the entire scene unfold through his hermetically sealed biohazard suit. He kept a running tally of doka bug evaporations to occupy his mind during the long, strenuous days in the treep fields. The juices in the stalk of the treep plant contained an enzyme called Alphasigmoidal Globulase, ASG, which destroyed most types of organic matter on contact. The doka bug's adaptations paled in comparison to this deadly defence mechanism. Wild treep only contained trace amounts of the enzyme, and its juice was only strong enough to deter grazers from taking a second bite. But when the scientists at AntiPro™ discovered its

3 *Macroarthropoda ornean:* Empire *Carbonata,* Domain *Eukarya,* Kingdom *Animalia*

effectiveness in weight loss products, they selectively bred treep plants with the highest concentrations of ASG and patented the new strain. The results: an exceedingly profitable product, as well as the untimely deaths of many an exploding doka bug and countless other critters that had the misfortune of coming into contact treep juice—farm workers being no exception.

The farm worker compulsively checked the tape that sealed the gap between the gloves and the sleeves of his biohazard suit. He did not want to become the next victim of treep exposure. Last month, he had witnessed a co-worker lose two of his hands. He had been warned about the dangers of treep juice, but nothing could have prepared him for what he had seen. He couldn't shake the image of the rapidly dissolving flesh. One second his co-worker's hands were there; the next, they were gone, bone and all. It had happened so quickly. Thinking about it made his wrists tingle. He pushed the image from his mind. He was paid by the kilogram, and he couldn't afford to waste time dwelling on the frivolity of workplace hazards. He checked the tape one last time, and then grasped a cluster of long stalks in his upper two hands. With his lower two, he hacked away at the base with a dull sickle, spraying the deadly juice all over his biohazard suit, which suddenly seemed much too thin. He looked for another doka bug to occupy his mind while he continued his work.

The worker had almost managed to stop thinking about dissolving hands when a drop of hot liquid materialized on his forehead. It trickled down and stung his eye. He froze in panic. Had the treep juice breached his suit? He had checked the seal around the wrists, but not the head piece. How could he have been so careless? Images of his wife and six children flashed through his mind as he waited in terror for his head to disintegrate. The terror vanished as quickly as the doka bug when the liquid reached his mouth and he tasted the familiar saltiness of his own sweat.

The worker laughed out loud, partly in relief that his head was not dissolving and partly at his own stupidity. He knew better. If the liquid had been treep juice, he would have been dead long before his brain could interpret the signal from the sensory receptors in his skin. It had been a long day, and he was just tired. He shoved a handful of stalks into the burlap sack slung over his left shoulders and continued on to the next bunch.

Once the sack was full, the worker hauled it to the weighing station to determine whether he had harvested enough to pay for his weekly food ration. If not, he would have to return to the field and reap one more back-breaking row. The scale beeped as the measurement stabilised. The scale attendant gave him a quick nod to indicate that he had amassed an acceptable amount. He let out a sigh of relief, tossed the sack into the back of a transport, and then headed to the decontamination shower.

The transport carried the day's harvest of treep to the spaceport, where it was loaded onto a massive astrobarge and shipped to the refineries on the moon Ydna. Here, machines crushed the stalks and collected the potent juice in large glass vats. The raw juice was heated to a temperature that partially denatured the ASG enzyme, making it safe for consumption. A sample of the batch was sent to quality control to undergo a series of rigorous tests to ensure its safety. After passing the tests, the refined juice was bottled and shipped to a factory planet in the Triangulum Galaxy. Here, the partially denatured ASG was extracted and manufactured into powdered form. The powder was packaged, labelled, and ready for distribution. This particular batch was headed to a small planet near the edge of the Milky Way Galaxy. The human beings of planet Earth were some of the leading consumers of AntiPro™'s magic diet powder. By sprinkling it on their food, they could eat as much as they wanted without absorbing a single calorie.

The worker limped with exhaustion from the transport station to his shack. He had a vague notion of the destiny of the crop he worked so hard to harvest. He had overheard other workers whisper about the hoomans and laugh at photographs of the fat, fleshy beings who consumed to excess. A low grumble rose from the depths of his empty stomach. It had occurred to him once or twice that the circumstances were rather odd. He worked so hard and could barely feed his family, and yet the hoomans were paying a hefty price to actively *prevent* caloric uptake. When he tried to express the absurdity to his wife, she had assured him it was just gossip. Everyone knew that treep juice had life-saving medicinal properties, and he thus risked his life every day for a noble cause. She sounded just like the company's upper management. Long days in the treep fields had always rendered him too tired to press the issue, but after today's scare, he found himself unable to turn his mind off. When he finally did fall asleep, he dreamed of doka bugs

exploding in the treep fields, except they weren't doka bugs. They were the scale attendant, the suit manager, the site supervisor. Instead of feeling horrified, the worker laughed wholeheartedly as, one by one, he watched AntiPro™'s higherups vanish into nothingness.

Three weeks after it was packaged, the batch of AntiPro™ arrived at a warehouse on Earth. It was then loaded onto a truck and delivered to several supermarkets around town. A woman with absurdly tall hair and a purple blazer paid more than the ornian's weekly salary for a single 250-gram tub. Meanwhile, the farm worker clocked in for another day's harvest, only this time, he veered slightly from his usual routine. The previous night, he had returned home from work to discover a brood sack forming on his wife's carapace. She was pregnant. Again. The worker had become hysterical. He could barely feed their family now—what were they going to do when several more children were born? An ornian female's brood sack could carry up to fifteen young, and he had praised his lucky stars when she only had six the first time around. It was too early in development to guess how many were forming now. His wife, upset with his negative reaction, had insisted that he would need to get a promotion. "But no ornian has ever received a promotion," he had argued.

"What about Snyeild" she'd retorted. "His wife was bragging to everyone that the company had accepted his request to move up to scale attendant."

"And look how that turned out," he said, referring to his colleague who had lost his hands the previous month.

"Well, who got his promotion then?"

"No one, as far as I know."

"There you go! They must be looking for someone else to take his position. That someone should be you!" The worker had not responded. Instead, he had fantasized about his boss exploding like a doka bug. Then a thought had occurred to him. Maybe he *could* get a promotion. Maybe if he worked as a scale attendant, he wouldn't have to go through the decontamination showers and would be able to sneak some treep juice into the main office building, and then . . . He could picture all his problems evaporating in the blink of an eye. Accidents happened all the time in the field, why not inside? The company would have to replace all the pencil pushers with someone. He had sat in silent contemplation while his wife had rambled on about how he

would need to do something to get noticed by his superiors. This morning, he set out to do just that.

Instead of sauntering to the dressing room in silence, he spoke to the suit manager behind the desk. He had spent the entire transport ride figuring out what he would say and had decided that the best way to get noticed would be to show them that he was in on the company gossip. "It's a good thing no hoomans work here; they would never be able to fit into these suits," he said awkwardly to the suit manager and let out a nervous chuckle. Without so much as acknowledging that he had heard him, the manager selected one of the more well-used biohazard suits off the rack and passed it to the worker. The worker took the suit, thanked him too enthusiastically, and continued into the dressing area. He told himself that the suit manager must be having a bad day, and he would try using the same line on someone else. Perhaps the scale attendant would be more receptive.

He set off into the field wracking his brain for more ways he could get noticed. Maybe if he exceeded his daily quota of treep, he would be praised for his hard work and offered a promotion. It would be difficult, given the immense effort it took just to gather the minimum amount. He surveyed the field and headed toward the row with the tallest, thickest plants. He grabbed a large handful of stalks and slashed at them with his sickle. It was getting late in the harvest and the stalks were especially turgid. With each slash, the pressure caused more spray to burst forth from the stems and soak his suit. He worked quickly, shoving the stalks into his sack before they could lose too much of the precious juice, unaware that late-harvest treep was even more potent than usual. The longer growing season allowed the plants to produce more of the deadly enzyme, building up its concentration in their fleshy tissues.

The worker fell into a rhythm: grab, slash, bag. Grab, slash, bag. Instinctively, he started to sing to the rhythm. He sang like his ancestors before him who had farmed these lands for centuries, long before AntiPro™ had bought up all the fertile land and used it for ASG production. Back in the days when the ornians grew a variety of crops that sustained their population and no one went hungry. Back in the days when treep was no more dangerous than a strong onion. As he sang, the flexible material of his hermetically sealed biohazard suit vibrated from the sound waves, creating a delightful

overtone. He sang all the way down the row and then into the next, his face shield fogging up with each note he sang and clearing with each inhalation.

Approximately half-way down the third row, the worker noticed something sounded different as he sang. In fact, it felt different, too. It felt as though he could breathe more easily. He could *see* more clearly. The suit stopped vibrating along with his voice and the face shield was no longer fogging up. He sang louder in hopes of recreating the overtone and continued to hack at an especially engorged stalk.

A tiny drop of liquid landed on his forehead. This time, it was not sweat. This time, there was a breach in the worn-out suit, which was two years past its expiration date and knowingly kept in rotation by upper management to "reduce unnecessary expenditures." The contents of the worker's head splattered across the inside surface of his face shield. The small slit between the face shield and the hood fabric had allowed enough treep juice in to dissolve down to his second set of shoulders. His first set of arms remained mostly intact in their sleeves, severed from the rest of his body, hands still clutching the stalks of treep that had suffered a similar fate a split second earlier. The afflicted body parts, now a fine red mist, escaped through the same slit through which the treep juice had entered, leaving behind no evidence that the upper quarter of his body had ever existed. He did not have time to think of his pregnant wife or their six children. A lone doka bug was the only witness to the horrific display.

CHAPTER 1

Linda Pumpernickel

Homo sapien
Empire: *Carbonata*
Domain: *Eukarya*
Kingdom: *Animalia*

Linda Pumpernickel awoke with a start to the sound of a large vehicle speeding past her bedroom window. She nearly jumped out of her leathery skin as the back end of the truck collided with the curb and crashed down to the pavement on the other side. She felt around blindly for her thick glasses and caught sight of the AntiPro™ delivery truck just as it lurched around another corner, again failing to dodge the curb. Linda was almost certain she saw a piece fly off, although she could never be *too* certain these days, what with her declining vision and increasingly vivid imagination. What she was certain of, however, was the odd feeling of empathy gnawing at her amygdala the same way each street corner gnawed at that poor truck's undercarriage. She envisioned more pieces of machinery flying off the vehicle as it careened helplessly down the road, destination unknown, unable to slow itself down. It could survive quite a few dings, the loss of its headlights, a wiper blade . . . but what would come of the poor beast when its motor was inevitably penetrated? What about its tires? A tear formed in the corner of her left eye as she pictured the truck struggling to continue forward, slowing down, engine sputtering, coughing up vital fluids until it could go no further and stopped lifeless and abandoned at the side of the road.

She snapped out of the daydream and lifted up her glasses to wipe away the tear before it could drop. She scolded herself for relating so strongly to an inanimate object, remembering what had happened when her great uncle

Theodore had done the same. Linda suddenly became aware of the throbbing in her temples and the burning at the base of her esophagus. Her back creaked as she reached for the bottle of antacid that lived on her bedside table. She took a swig and almost choked when she noticed the time displayed on her antique two-dimensional alarm clock. Had she really slept in until ten o'clock? She really was letting herself go. She felt a pang of guilt for wasting the morning, but what else would she have done? She didn't have any important business to attend to. She didn't have much business at all. Since her retirement nearly five years ago, the amount of business in her life had decreased dramatically.

Much like the air in the truck's tires.

No! Linda told herself, determined not to slip back into her fantasy land. She forced herself to stand up slowly, waited for the headrush to pass, and then shuffled to the bathroom to splash her face with cold water. She looked into the mirror and cringed at the sight of the old lady staring back at her. She pulled her glasses down to hide her crow's feet, but the powerful lenses only magnified the dry canyons that formed a vast network around her eyes. In an act of futility, she dabbed lotion into the crevices until her skin could absorb no more. She felt a jolt of arthritis in her wrist as she screwed the lid back onto the tub of anti-aging moisturizer. "False advertising," she said to her reflection. Her eyes moved from her crinkled face up to the wiry baby hairs that stood upright along her hairline like antennae. She dampened them with water from the sink, knowing very well they would spring back up in a matter of minutes. Constantly dyeing her hair in an unsuccessful attempt to hide the gray had clearly caused some damage. Her most recent colour experiment had resulted in an unnatural orangey-yellow colour that she despised only slightly less than the gray. It was a losing battle. She sighed and tied it back into a small flop of a ponytail, and then wrestled with her bangs until they sufficiently hid the deep creases in her forehead that otherwise made her look perpetually surprised.

Exiting the bathroom, she shouted a voice command to turn on her holographic television. The artificial intelligence reminded her that shouting was unnecessary before displaying a targeted advertisement. Her living room momentarily transformed into the decadent dining hall of Spacay Space Vacations' seniors' getaway astrocruise. Linda paid no attention to it as she

rummaged around her closet, struggling to find an outfit that wasn't horridly unflattering on her ever-widening waistline. She eventually decided on wide-cut jeans with an elastic waistband and a white blouse with a pink floral pattern. She laid the outfit on her unmade bed and searched her dresser drawer for matching socks. Not only did she require socks that matched each other, but socks that matched the whole outfit. Linda clung to the belief that a good pair of socks really tied an outfit together. It is unknown where she got this idea from, but it had caused her a good deal of stress whenever she lost a sock to the dryer gnomes. So much stress, in fact, that she had stopped putting socks in the dryer altogether and begun hanging them on a line. A logical person could see that this was a quite irrational stressor, as her socks were barely visible once hidden under her jeans and her shoes. Linda, however, was not what most would consider a logical person.

"Where are those blasted things?" she muttered as she tossed sock after sock out of the drawer. She was searching for a pair of socks that perfectly matched the light pink flowers on her blouse. She emptied the entire drawer and still no luck. She stumbled barefoot onto the balcony to see if the pink socks were on the line. She discovered too late that it had rained overnight and everything on the line was soaking wet, and now, so were her feet and the bottoms of her flannel pajama pants. She was faced with a dilemma: should she walk back inside with wet feet and trace footprints all over the floor, which she would have to wipe up? That seemed like a real bother. But what else was she to do? Stay outside?

"Screw it," she said, and removed her pants right there on the deck. She could use them to dry off her feet and avoid mucking up her laminate floors. She bent over and started dabbing her feet dry, completely unaware that her sizeable rump was in full view of her neighbour, Mr. Thompson, an eighty-something-year-old widower who watched in stunned silence from his rocking chair on the porch.

Back inside, Linda was now faced with a second dilemma: whether or not to go ahead with her chosen outfit in the absence of the proper socks. After several minutes of pondering, rummaging, and pondering some more, she went ahead with the original outfit. She decided plain white socks would do with this selection. Although the obsessive part of her mind was deeply

distressed at this decision, the small rational part of her brain that remained was able to block it out for the time being.

After several more minutes of fussing about, Linda was finally ready to head out into the world. Whether or not the world was ready for her remained to be seen. She stepped out into the cool, late morning air and felt her sock anxiety dissipate. It was a lovely spring day. Air quality was tolerable. She estimated visibility to be about twenty kilometres, which was as good as anyone could hope for these days. Linda was in no hurry. Her only real commitment since retirement was singing soprano in her senior ladies' show choir, satirically called the Baffin Babes. Apart from her compulsive sock matching, Linda was quite laid back—at least that's what she told herself.

As she wandered down the street, she admired her neighbours' gardens and the tall palm trees that lined the road. It was hard for her to believe that this neighbourhood had once been arctic tundra, covered in snow and ice for most of the year. Nowadays, Baffin Island in Northern Canada was one of the few inhabitable places left in the world. Any closer to the equator, and it was simply too hot. On the rare occasion when solar winds temporarily cleared the layer of smog that surrounded Earth, space travellers could see the brown dust belt that encircled the centre of the planet. The dead zone, as it was called, covered more than half the total surface area of the planet, spanning fifty degrees north and south of the equator. The only creatures that could survive such barren conditions were extremophile bacteria and a handful of insect species. The occasional bird could be seen instinctually following a migratory path through the dead zone until the extreme heat either caused it to promptly turn around or drop dead.

Linda looked up to the overcast sky and spotted a carbon scrubber as it soared by. She had always liked the purple jet stream left behind by the scrubbers, which had been commissioned to remove excess carbon dioxide and other greenhouse gases from the atmosphere after the overuse of fossil fuels nearly destroyed the planet some years ago. She hadn't the faintest understanding of how they worked, but she thought the purple streaks were pretty. Today, they were also digging up feelings of nostalgia, as they reminded her of the clouds on planet Sagana. She had lived there and found work teaching English to the saganites during the great evacuation, which had lasted for

nearly two decades. It had begun when extreme weather events and natural disasters rendered Earth unfit for human occupancy. Linda recalled the widespread panic and mass hysteria when people were forced to relocate to various sister planets so that environmental restoration could be carried out. That's when the carbon scrubbers were first commissioned. She never understood why some people were so resistant to leaving a planet that so obviously needed some time alone to recuperate. She had taken the move in stride and thought of it as an adventure. There was nothing wrong with a little change of scenery, and the scenery on Sagana was lovely.

Linda smiled as she recalled the incredible nasality of the saganite voice, and how it had caused them to struggle with English pronunciation. She had tried to use her knowledge of vocal technique that she had learned from singing in choirs to help them, but it was no use. Years later, she came across an MRI scan of the saganite larynx and discovered that it was located up in the nasal cavity, unlike the human larynx, which is down at the entrance of the trachea. It was physically impossible for them to *not* sound nasally. All her efforts had been in vain. The memory made Linda giggle out loud as she continued her leisurely stroll. A passerby saw Linda's far off look followed by her giggle and wondered if he ought to contact the neighbourhood psychiatric hospital to ask if they were missing a patient.

Linda had been reminiscing a lot in the past few weeks, which made her even more spacey than usual. The other day, on her way home from rehearsal, she was thinking about grade school when she was struck with a bad memory of a particularly nasty girl who had given her the nickname "Linda Plumpernickel." She had been so busy dwelling on this thought that she missed her bus stop and had to walk five kilometers to get home. *Serves me right,* she had thought. *I need the exercise.*

What was it that was stirring up all of these old memories and emotions? It was probably her upcoming milestone birthday: in two weeks time, Linda was going to be sixty-five. In fact, the main objective of today's outing was to begin preparations for her birthday party, but first, breakfast. Linda could smell the intoxicating aroma of freshly baked bread and pastries as she approached Daisy's Diner. She entered the small café to the ring of a bell and took her usual seat near the window. Daisy heard the bell and popped out from the kitchen. "Ah! My morning delivery of pumpernickel!" Daisy

made the same joke every time Linda came in and laughed just as hard at her own wit as though it were the first time. Linda didn't mind. Daisy was old and borderline senile. Unbeknownst to her, she had acquired the nickname "Crazy Daisy" with some of the regulars.

"Good morning, Daisy. I'll have the usual." The "usual" was an apple Danish pastry and Earl Grey tea with milk and honey. Daisy made the perfect cup of tea every time. Linda didn't know how she did it, but the proportions were always spot on.

"Would you like AntiPro with that?" Daisy asked as she reached for Linda's favourite mug.

"Not today," Linda replied. She had given up that wretched stuff years ago after suffering a fainting spell caused by malnourishment, but Daisy could never remember. Linda thought it was obvious, what with her currently rotund figure. When her meal came, Linda savoured it. There was nothing in the world more comforting than a good cup of tea. It was like being hugged on the inside. She took a bite of her Danish and then a sip of Earl Grey, creating a delightful mush in her mouth. The best thing about Daisy's Danishes was that she baked them to perfection so that there were no crunchy bits of apple. Just warm, apple-y goo, through and through. The perfect Danish and the perfect cup of Earl Grey made for a divine combination. After she finished her scrump-diddly-umptious breakfast, Linda invited Daisy to her birthday party and tossed her napkin into the trash can on her way out the door.

* * *

Later that day, Daisy would take out the trash and toss it into the dumpster out back. The next morning, the garbage truck would come along, foraging through the streets like a giant beetle, pick up the dumpster with its steel pincers, and dump it into its cavernous abdomen. After completing its route, the truck would then drop its load at the nearest TRASH ejection station, located forty-five minutes away from Daisy's off Highway 78, just past the carbon scrubber launch pad. After being compressed and packed into a high velocity super-rocket (the disposable kind), the garbage, including Linda's napkin, would be launched into space. Four days later, give or take a day and

a half, depending on the position of the Earth's orbit at the time of ejection, the rocket would reach the black hole H1821.

Unbeknownst to Earthlings of the time, the quantity of garbage that entered the black hole would become so great that it would develop its own gravitational pull strong enough to condense into a new planet. After several billion years, this planet would develop a molten plastic core, a solid mantle and crust, and an atmosphere consisting largely of carbon dioxide and methane. Eventually, life forms would emerge, and then evolve into a diverse ecosystem, from which a new species of sentient beings would spring forth. The sentient beings on the planet would harvest their natural resources, which were derived from the human-made wastes sent there billions of years prior and were composed mainly of plastics, rubber, metal alloys, and nuclear waste. They would use these materials to manufacture products like trees, soil, and rocks. The manufacturing process would produce incredibly harmful waste products, such as oxygen, nitrogen, and dihydrogen monoxide that would pollute their atmosphere and lead to a global climate crisis.

CHAPTER 2

Dr. Snodgester Slayneli

Homo sapien
Empire: *Carbonata*
Domain: *Eukarya*
Kingdom: *Animalia*

Linda woke from an afternoon nap just in time to catch the beginning of *Earth's Hour*, a subset of the news in which journalist Petunia Petals interviewed experts about various worldly issues. Linda only tuned in to gawk at Petunia's flashy fashion choices and then gossip about them at choir. The celebrity's altitudinous hairdo baffled Linda. She stared at the three-dimensional hologram floating in her living room for a minute, and then went about her errands. Linda left the 3D-TV on, half listening, as she tidied the kitchen and began dinner preparations.

"The study of sound energy in the universe is not a new field of astronomy. Cosmic microwave background radiation was discovered on Earth in the 1960s. Radio telescopes, such as the one located at the abandoned Arecibo Observatory in Puerto Rico, have been around for just as long. However, it wasn't until fairly recently that the significance of large-scale universal sound energy was viewed through a different lens." The charismatic hostess was particularly proud of herself for coming up with that line, which was made obvious by the flash of humour in her intense blue eyes and the slight raise of one corner of her brightly coloured lips. She wore a flashy purple blazer with dangerously pointy shoulder pads, which her producer hated. He complained that all the flashiness took away from the serious nature of the show. Just to spite him, she wore her hair even flashier by backcombing it until it was at least five inches high and filling it with multi-coloured ringlet

extensions that occasionally wrapped around her shoulder pads, which "distracted audiences," according to her producer. But he tolerated it because he knew as well as Petunia that her outrageous fashion attracted a demographic of viewers that would otherwise be uninterested in the show.

After pausing briefly to let her lens pun sink in, the hostess finished her introduction. "I'm Petunia Petals, and this is *Earth's Hour*. Today's guest is here to talk about his ideas on sound energy and the universe. I'd like to welcome esteemed astrophysicist, Dr. Snodgester Slayneli."

The camera zoomed out, revealing an aging man with dark skin, a mustache, and a puff of salt and pepper hair that was beginning to recede at either side of his forehead. He had kind, dark brown eyes that sparkled with intelligence, as well as a glint of mischief. Peering into those eyes, one was immediately struck with the feeling that they hid a wealth of information no one else knew. And, of course, they *did*. He was a doctor of astrophysics, after all.

"Dr. Slayneli," the colourful hostess continued, "could you give our viewers some background information on the currently accepted hypothesis on how the universe formed?"

"Well Petunia, I think it's safe to assume that most of your viewers have heard of the big bang theory," Slayneli began in his deep, confident voice. Unlike many of his contemporaries, Slayneli was not camera shy and came across as well-spoken and engaging on television. "Most scientists now agree that the term 'big bang' is only a partially accurate description of what happened during the formation of the universe. Instead, we should refer to the 'big *bangs*,' plural, since there were many bangs involved in the formation of the universe. These bangs sounded like unimaginably large cannons being fired repeatedly in a predictable rhythm."

He turned to the camera to speak directly to his viewers. "Now, we all know that the universe is an immense, complicated place, filled with complicated life forms, so surely its formation was not as simple as cannon blasts. Indeed, there were many other sounds involved—sounds that were eerily similar to cymbal crashes, horn fanfares, and several other orchestral instruments."

"The cosmic symphony," Petunia chimed in.

"Yes, that is the term some scientists have used in their writings."

"So how does your research differ from theirs?"

"It doesn't differ, Petunia, it builds on it," Slayneli corrected. "I have simply analyzed all of the different sounds, translated them into audio patches detectable by the human ear, and assimilated them into one."

"Simple, yes," Petunia said playfully to the camera. Slayneli grinned in response. "And what did you find when you listened to all these sounds at once?"

"You aren't going to believe this," Slayneli said slyly, "but the resulting track bore a striking resemblance to Tchaikovsky's *1812 Overture*."

"You mean, the one that goes 'la-da-da-da da-da *da* da da'?" She sang the melody more or less accurately.

"Yes, that's the one!" Slayneli's eyes widened, but he tried not to look too surprised that the fashionable host was familiar with such a historical piece of music.

Petunia paused, waiting for the astrophysicist to crack up and let her in on the joke. He did not. Instead, he continued to describe his research, becoming more and more animated in his excitement.

"Perhaps our most ground-breaking finding has been that this music never stopped. It's happening all around us, every minute of every day!"

Petunia cocked her head to the side, listening. "I can't hear anything."

"Of course, you can't. It's much too broad for a single organism to hear all at once. It's spread throughout the universe, and not always at frequencies that we can detect." Slayneli saw Petunia's painted eyebrows furrow in confusion. "Think of it this way," he explained. "Although we do not consciously hear the sounds of the universe, we would certainly notice if they were to stop. It would be like when the furnace shuts off and you suddenly become aware of the silence."

"Okay," Petunia nodded, eyes closed in concentration. "But I can hear the furnace when it's on if I turn my attention to it."

"Here's another analogy for you," Slayneli continued. "A city creates constant noise, which is a result of all of the sounds happening in that city simultaneously: the rumble of car engines, the chatter of conversation, the rustling of leaves, and so on. You can focus your mind on two or three separate sound events, but the rest becomes background noise. I like to call it a 'buzz.' Your brain has evolved to only focus on sounds that pop out and

could be potential threats. All other sounds, including the cosmic symphony, become part of the background buzz."

Petunia's blue eyes narrowed. "How does all this sound travel through the vacuum of space?" Surely this question would stump her guest. But Slayneli didn't miss a beat.

"If you imagine the universe from the perspective of a giant, each star, planet, and asteroid acts as the matter through which huge sound waves travel. Sure, empty space exists between celestial objects, just as empty space exists between particles of gas in the air. It's difficult for us to wrap our minds around the idea of such large sound waves, but spectral analysis shows evidence of wave-like movements of distant galaxies."

Petunia certainly could not wrap her mind around the idea, so instead, she wrapped a pink ringlet around her finger nervously. For the first time that she could remember, Petunia was speechless. Unable to think of a follow up question, she said, "It's time to take some questions from our viewers." The phone lines immediately lit up. "Caller one, go ahead."

"Hi there," the caller said in a thick southern accent. "Dr. Slayneli, are you familiar with the idea of entropy?"

"Yes, sir, I am."

"According to entropy, matter tends towards maximum disorder or randomness."

Slayneli was slightly offended that the caller felt the need to explain this to him and barely suppressed an eye roll. "That is correct. What's your question?"

"How can a universe that favours randomness produce sounds that are organized enough to be musical?"

"You mean the same universe that has produced cells, which are organized into tissues, which are organized into organs, which are organized into complex, intelligent life forms?"

The caller did not respond.

"Are you still there, caller one?" Petunia asked. He was not. "Okay, moving on to caller two. We're ready for you."

Both Petunia and Dr. Slayneli were caught off guard by the feeble voice that croaked through the speaker. It reminded Dr. Slayneli of his late

grandmother. The old lady's voice asked, "What are the implications of your findings?"

"Great question," Slayneli said. "Such *organization* in sound patterns, as caller one put it, implies that there is some sort of significance to the phenomenon. It is my belief that the sound energy produced by the big bangs is vital to all living things, much like sunlight is essential to life on Earth. And just like life on Earth depends on a certain balance of the sun's energy—we would perish if there was too much or too little—so, too, does the structure of the universe depend on a certain balance of sound energy. Too much or too little sound energy would disrupt the balance, and that's what scientists mean when we talk about universal de-tuning."

"So, you agree that universal de-tuning is real?" the caller asked.

"Without a doubt," Slayneli said directly into the camera.

After a brief pause, the caller continued, "How are you able to focus such widespread energy into sound bites that we can make sense of?"

"Another great question," Slayneli replied. "We use a focusing sonoscope to quantify widespread 'buzz' noise. Much like a light microscope focuses light waves through a series of lenses into a field of view, the *f*-sonoscope focuses a broad range of sound waves through a series of tympanic membranes into a single frequency known as the consequent pitch. The consequent pitch depends on the scope of the sounds entering the sonoscope. Currently, the strongest sonoscopes can take in all of the sounds of an entire planet. For example, the consequent pitch of every sound happening simultaneously on Earth at any given time has a frequency of 392.0003 hertz and is perceived as G4 in the Western musical scale. Scientists have found evidence that Earth's consequent pitch has remained incredibly stable at G4, we think since the big bangs. Only in the past one hundred years or so has it begun to shift."

"What would cause it to change now?" caller two asked, stealing the show from Petunia Petals, who was becoming ever more distressed that a single caller was hogging all the airtime. Dr. Slayneli was too engaged in the conversation to notice her fidgeting.

"Graphs show the pitch shift beginning at around the year 2090. What major change occurred in the universe just prior to that?" Slayneli was purposely leading the caller to draw her own conclusions, much like a teacher would lead a pupil.

She thought for a moment, and then said, “The Second Space Age?”

“Very good! The Second Space Age was characterized by a marked increase in intergalactic trade and travel. For the first time since the big bangs, materials were being transported all over the universe much more rapidly than they would naturally.”

“And the consequent pitch of a planet depends on the types and proportions of matter on that planet,” caller two quoted Slayneli’s Law to the lawmaker himself. She was having an epiphany live on television. “Which means that large scale imports or exports to or from a planet would affect its pitch!”

“Bravo!” Slayneli couldn’t stop himself from clapping. “You’ve done your homework, caller two. May I ask your name?”

“Norma,” the voice over the phone said smugly.

“Thank you for your call, Norma,” Petunia interjected and closed the phone lines to focus attention back on her fabulous self. “Dr. Slayneli, could you tell us more details about the specific events leading up to the Second Space Age?”

Slayneli was disappointed Norma had been cut off. It was refreshing to speak with someone who actually seemed to understand the science, but he humoured his host. “Humans have been sending stuff into space since way before the second space age. It all started with simple rockets, spaceships, satellites, and probes. Then, in the 2020s, billionaires ran out of vacation destinations on Earth and decided to give space a try. This led to the evolution of the space tourism industry, which became affordable to the upper middle class in the 2060s. By the 2080s, the department of extraterrestrial relations had developed strong ties with several planets beyond our solar system. With Earth’s temperatures becoming unbearably hot in most places, many people immigrated to our sister planets.

Petunia inhaled sharply in an effort to cut in, but Dr. Slayneli pressed on. “The popularization of intergalactic trade and travel also led to an influx of alien materials onto planet Earth. Substances that would have never formed naturally on the planet are now imported in abundance. One example of this is ASG, the active ingredient in anti-protein powder made by companies like AntiPro™. The importation of ASG to Earth began when the obesity epidemic threatened the existence of mankind, causing heart failure, as well as the inability and lack of desire to copulate. Oddly enough, this epidemic

was actually beneficial to the Earth as a whole, as it temporarily halted the overpopulation of the planet. Then, the availability of ASG saved many lives from serious health conditions and re-established the ability and desire to reproduce, thus re-establishing the trend towards extreme overpopulation. However, the subsequent widespread use and abuse of the drug took, and continues to take, as many lives as it has saved, killing its abusers via fatal malnourishment. And so, nature continues its struggle to maintain balance."

Slayneli had done what he had promised Petunia he wouldn't do before the show went live. He had strayed off topic and started rambling about other issues he was passionate about. Even worse, he was speaking critically about AntiPro™, the show's largest sponsor. He saw Petunia throwing daggers with her eyes and the producer flailing frantically from behind the camera, so he changed the subject.

"And we can't forget about TRASH—Transfer of Rubbish and Sewage to H1821. This program was created and implemented by British astrophysicist William Sugarbaker, who won the Nobel Prize in 2099 for solving many environmental and physical space issues on the planet. Sugarbaker theorized that ejecting all of Earth's waste into the black hole would be a safe and effective way to solve many issues of pollution and overpopulation. It worked quite well, but neither Sugarbaker, nor any other human, could have predicted the long-term consequences of this mass exodus,"

Slayneli paused just long enough for Petunia to ask, "By 'consequences,' I assume you are referring to universal de-tuning?"

"Yes. That, and the fact that no one knows what happens to all of the trash once it enters the black hole."

Petunia raised her eyebrows in consideration. "I hadn't thought of that," she said.

"Not many have," Slayneli said. "I should also mention that I've only discussed the events that took place here on Earth. Similar trends occurred on billions of other life-sustaining planets throughout the universe, thanks to the ever-growing influence of the Intergalactic Trade Corporation."

"We have time for one last question," Petunia said in response to the producer's gesture to wrap it up. "According to the response on social media, our viewers are dying to know why we should be concerned about universal

de-tuning. What would happen if the universe went out of tune? How far out of tune must it get to become dangerous?"

Slayneli took a deep breath, nodding thoughtfully. "It is predicted that the bogus oscillations caused by conflicting sound waves would interfere with gravity, eventually causing planets to be flung from their stars, and stars to be flung from their galaxies, and so on, in a butterfly effect of epic proportions. It is unknown exactly how this would affect the universe as a whole, but scientists believe it would cause incomprehensible devastation. The exact degree to which the de-tuning must occur to have an observable effect is also unknown."

"Unknown?" Petunia asked skeptically. Slayneli was ready with another analogy.

"It's like plate tectonics. Seismologists know that the plates are shifting and pressure is building up, but they cannot predict with much accuracy when an earthquake will strike. All they can do is monitor the seismic activity and hope for the best. Similarly, we can monitor the pitch change of a star system, but we do not know when it will start to cause problems. It is known with some degree of certainty that once the de-tuning reaches its limit, it will result in the extinction of all life in the universe. I wish I had a more definitive answer for you, but at this point, more research needs to be done."

Dr. Slayneli briefly debated whether or not to continue with what he was about to say. He wanted to bring up another controversial topic, but the producer was now vigorously signaling for them to wrap it up. The mischievous spark ignited Slayneli's eyes, and he decided to continue. "The main obstacle to furthering our understanding of universal de-tuning is that, for some reason, it has become a political issue. The problem with politicians is that they don't look beyond the scope of their term in office. It's not their fault, really; it's the system. It's also a flaw in human nature. We don't have the brain capacity or the foresight to think of the long-term consequences of our actions. Who would have thought that catching one more fish would lead to the extinction of that species, which would then cause a total collapse of the marine ecosystem? Who would have thought that driving gas-powered vehicles would cause eighty percent of Earth to become uninhabitable?"

Petunia opened her mouth to answer, but the question was rhetorical and Slayneli continued his lecture before she could make a sound. "Well, the

truth is that everyone knew these things because scientists warned them, but they continued to do them anyway because of their inability to see beyond their own lifespans. And so they go about their business, day in and day out, worrying about more 'important' things, like, how much weight they've lost on the latest AntiPro™ diet, or planning their next cosmic vacation, unwilling to accept the fact that those things will contribute to their own extinction." If his mic were handheld instead of clipped onto his lapel, this would have been an appropriate time to drop it.

"Thank you so much, Dr. Slayneli. That's all the time we have for today's show." The panic-stricken host turned to the camera with eyes the size of saucers. "Thank you for tuning into *Earth's Hour*. Today's program was brought to you by AntiPro™ and the Intergalactic Trade Corporation. I'm Petunia Petals."

CHAPTER 3
The Baffin Babes

When Tuesday evening rolled around, Linda, too, rolled. She rolled off the loveseat, where she had been hand sewing sequins onto a costume while singing along with her choir practice track. She had been focusing so hard on the two tasks that the sound of her antique grandfather clock chiming in the six o'clock hour startled her right off the couch.

Oh dear me! I'm going to be late! In her best attempt to hurry, she jammed the needle through the stretchy fabric, stabbing herself in the process. She cursed loudly and went to the bathroom to search the medicine cabinet for her tube of liquid skin. She removed every single box and bottle and pill case from the cabinet but could not find the liquid skin. Instead, she found an old-fashioned bandage. It took her three tries to place the adhesive strips just right, so they weren't too tight or too loose. Once the bandage was placed, she saw the tube of liquid skin hiding in the mug that served as a toothbrush holder. Had she accidentally used the liquid skin as toothpaste? She vaguely recalled her teeth feeling strange the other day, but she didn't have time to dwell on that now. She shuffled into her bedroom to get her sheet music and glittery, lime-green pashmina and caught a glimpse of her dishevelled reflection in the mirror. *Drat. I can't go out looking like this.* Since this was Linda's only real social activity these days, she insisted on keeping up appearances.

Linda bumbled and Linda fumbled, and Linda futzed about. By the time she had found socks that matched her pashmina and hid her forehead wrinkles behind her bangs, she knew she would be half an hour late. Again. She also knew that she would be on the receiving end of the director's glare, and possibly even a lecture from Mary-Joe of the choir's board of directors, who

was responsible for taking attendance, and who took her job way too seriously. *Maybe I can avoid her*, she thought as she boarded the sky bus. Then she realized that she had left her sheet music sitting on her bed, which meant she would have to sign out a copy of the visitor's sheet music. Mary-Joe was also in charge of the visitor's sheet music. Linda contemplated skipping rehearsal altogether to avoid the wrath, but she had to go to invite the ladies to her birthday party. No one had responded to her e-mails.

By the time Linda arrived at the hall, she had decided not to sign out the sheet music. She figured she had the songs mostly memorized anyway. She carefully pushed open the large door so as to not make a sound and tiptoed her way to the risers. She'd almost made it unnoticed when the door slammed shut behind her and everyone turned and glared. Linda suppressed her embarrassment as she clambered to her spot in the third row, not in the middle, but not on the edge, behind six-foot-tall Virginia. At five-foot-two, Linda could barely be seen by the audience, and she had all sorts of trouble trying to see the director. She had requested a new riser placement on several occasions, but the director refused, explaining that the current configuration was optimal for the blend of voices.

After nearly knocking over several singers with her booty, Linda found her place. It turned out that it was choreo day and she didn't need her sheet music after all. *At least one thing is going in my favour*, she thought. Judy, the choreographer, was busy discussing something with the director. At fifty-five-years-old, Judy was the youngest member of the choir. Linda took their discussion as an opportunity to whisper to Barb, who stood to her left.

"I'm having my birthday party this Saturday. It's at my house at four o'clock, or whenever you can make it. Any time after four."

"I'll check my schedule," replied Barb.

"I'm making appetizers and desserts. And my famous peach punch. All ASG-free, but you can bring your own if you like. I would love to have some Baffin Babes come so we can sing some songs. You can bring friends if you want, too. And, of course, spouses are also invited."

"Ms. Pumpernickel!" bellowed the director. "I think you've disrupted rehearsal enough for one evening."

Linda rolled her eyes. *Is this choir or boot camp?* she thought.

"Now that I have your attention," said the director, "we have decided to change some of the choreography for our fundraiser show."

There were audible sighs throughout the risers. Just when they had learned something really well, it was changed. This led to mass confusion and arguments about whether they were doing the new choreography or the old choreography and which was which. Most of the members were senior citizens and they had enough trouble learning it one way, let alone having it changed fifteen times. Linda was particularly inadequate at learning choreo, but she was totally oblivious to this fact. She danced all the wrong moves with absolute conviction. Linda completely zoned out during Judy's instructions and only snapped back to when the rest of the chorus started to run the song from the top. Linda poured her heart and soul into her jazz hands to the left, unaware that everyone else was doing spirit fingers to the right. She was off in Linda Land, having the time of her life. She had forgotten all about her shame for being late and interrupting rehearsal. The director and choreographer shook their heads in frustration. They simply did not know how to get through to Linda. And this was the real reason for her placement behind Virginia the Giant where her flailing was the least conspicuous.

Halfway through rehearsal, there was a short break and then announcements. This was Linda's chance to announce her birthday bash to the entire choir, but first she had to sit through the board members babbling away about uninteresting things. The last board member to speak was the treasurer, the most long-winded of them all, who gave them a detailed breakdown of the choir's budget. By the time she was finished, Linda had drifted off into the deepest depths of Linda Land and did not hear the president ask how the new costumes were coming along.

"Earth to Linda," the director said.

Linda jumped. "Huh? What?"

"Any news on costumes?"

"Oh, right, yes. The tops have all been made, I'm just finishing up the sequins."

"Will they be reading for a fitting next week?"

"Oh, yes, sure." In truth, Linda was behind schedule with the costumes. She would have been finished already if it wasn't for Beatrice going off AntiPro™ and gaining nearly a hundred pounds. Linda had had to re-sew

her top three times. Good thing the material was so stretchy, otherwise she was looking at a fourth. “Speaking of next week, I have some news that’s not exactly choir related, if I may.”

“Make it quick,” said the director sternly. She was clearly annoyed with Linda wasting more of their precious rehearsal time. This only made Linda nervous, and when she was nervous, she had great difficulty finding her words.

“I, uh, I just wanted to tell you how very dear you all are to me . . . and, uh, it would be very special . . . er, it would make me feel special . . . uh, I would like to invite you to my house this Saturday for my birthday party. It starts at four o’clock, or five, or three . . . uh, you can show up whenever it’s convenient for you. I will spread out . . . uh, I will have a spread of appetizers and desserts to share.” Linda had begun to recite specific directions to her house when the director interrupted her.

“Linda, why don’t you just e-mail everyone your address? We can find your house with our map apps.”

“Well, I think there’s something wrong with my e-mail. I sent out invitations the other day and no one responded. I’ll try again.”

“Ok, great. Let’s review the new choreo again. From the top.”

Linda, feeling slightly embarrassed, but only slightly, slunk back up to her spot on the risers. It didn’t take long until she was back in Linda Land, dancing up an error-filled storm.

When she got home that evening, Linda sent six separate messages to the choir’s e-mail list. Each message contained three to five hundred words explaining in excruciating detail the directions to her house from various starting points. None of them included her address.