

ORBIT BOOKS PRESENTS...

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Coming Attractions

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Editorial, August 2012

John Joseph Adams

Welcome to issue twenty-seven of *Lightspeed*!

Here's what we've got on tap this month:

We have original fantasy by Kat Howard (“Breaking the Frame”) and Linda Nagata (“A Moment Before It Struck”), along with fantasy reprints by Wil McCarthy (“The Necromancer in Love”) and Delia Sherman (“Cotillion”).

Plus, we'll have original science fiction by 2012 Nebula Award-winner Ken Liu (“The Bookmaking Habits of Select Species”) and a collaboration between Caroline M. Yoachim and Tina Connolly (“Flash Bang Remember”), and SF reprints by *io9*'s Charlie Jane Anders (“Love Might Be Too Strong a Word”) and award-winning author Michael Swanwick (“Slow Life”).

For our ebook readers, our ebook-exclusive novella is “A Separate War” by Joe Haldeman, and we have an excerpt of *Kitty Steals the Show*, the new Kitty Norville novel by bestselling author Carrie Vaughn.

All that, plus our usual assortment of author and artist spotlights, and feature interviews with bestselling authors Kim Stanley Robinson and Seanan McGuire (a/k/a Mira

Grant).

Our issue this month is again sponsored by our friends at Orbit Books. This month, look for *The Iron Wyrms* series, an exciting new steampunk series by Lilith Saintcrow. You can find more from Orbit—including digital short fiction and monthly ebook deals at www.orbitbooks.net.

It's another great issue, so be sure to check it out. And remember, there are several ways you can sign up to be notified of new *Lightspeed* content:

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Well, that's all there is to report this month. Thanks for reading!

John Joseph Adams, in addition to serving as publisher and editor of *Lightspeed*, is the bestselling editor of many anthologies, such as *Other Worlds Than These*, *Armored*, *Under the Moons of Mars: New Adventures on Barsoom*, *Brave New Worlds*, *Wastelands*, *The Living Dead*, *The Living Dead 2*, *By Blood We Live*, *Federations*, *The Improbable Adventures of*

Sherlock Holmes, and *The Way of the Wizard*. He is a four-time finalist for the Hugo Award and a three-time finalist for the World Fantasy Award. Forthcoming anthologies include: *Epic* (November, Tachyon), *The Mad Scientist's Guide to World Domination* (2013, Tor), and *Robot Uprisings* (2013, Doubleday). He is also the co-host of Wired.com's *The Geek's Guide to the Galaxy* podcast. Find him on Twitter @johnjosephadams.

A Separate War

Joe Haldeman

Our wounds were horrible, but the army made us well and gave us Heaven, temporarily.

The most expensive and hard-to-replace component of a fighting suit is the soldier inside of it, so if she or he is crippled badly enough to be taken out of the fight, the suit tries to save what's left. In William's case, it automatically cut off his mangled leg, and sealed the stump. In my case it was the right arm, just above the elbow.

That was the Tet-2 campaign, which was a disaster, and William and I lay around doped to the gills with happyjuice while the others died their way through the disaster of Aleph-7. The score after the two battles was fifty-four dead, thirty-seven of us crips, two head cases, and only twelve more or less working soldiers, who were of course bristling with enthusiasm. Twelve is not enough to fight a battle with, unfortunately, so the *Sangre y Victoria* was rerouted to the hospital planet Heaven.

We took a long time, three collapsar jumps, getting to Heaven. The Taurans can chase you through one jump, if they're at the right place and the right time. But two

would be almost impossible, and three just couldn't happen.

(But “couldn't happen” is probably a bad-luck charm. Because of the relativistic distortions associated with travel through collapsar jumps, you never know, when you greet the enemy, whether it comes from your own time, or centuries in your past or future. Maybe in a millennium or two, they'll be able to follow you through three collapsar jumps like following footprints. One of the first things they'd do is vaporize Heaven. Then Earth.)

Heaven is like an Earth untouched by human industry and avarice, pristine forests and fields and mountains—but it's also a monument to human industry, and avarice, too.

When you recover—and there's no “if”; you wouldn't be there if they didn't know they could fix you—you're still in the army, but you're also immensely wealthy. Even a private's pay rolls up a fortune, automatically invested during the centuries that creak by between battles. One of the functions of Heaven is to put all those millions back into the economy. So there's no end of things to do, all of them expensive.

When William and I recovered, we were given six months of “rest and recreation” on Heaven. I actually got out two days before him, but waited around, reading.

They did still have books, for soldiers so old-fashioned they didn't want to plug themselves into adventures or ecstasies for thousands of dollars a minute. I did have \$529,755,012 sitting around, so I could have dipped into tripping. But I'd heard I would have plenty of it, retraining before our next assignment. The ALSC, "accelerated life situation computer," which taught you things by making you do them in virtual reality. Over and over, until you got them right.

William had half again as much money as I did, since he had outranked me for centuries, but I didn't wait around just to get my hands on his fortune. I probably would have wanted his company even if I didn't love him. We were the only two people here born in the twentieth century, and there were only a handful from the twenty-first. Very few of them, off duty, spoke a language I understood, though all soldiers were taught "premodern" English as a sort of temporal *lingua franca*. Some of them claimed their native language was English, but it was extremely fast and seemed to have lost some vowels along the way. Four centuries. Would I have sounded as strange to a Pilgrim? I don't think so.

(It would be interesting to take one of those Pilgrim Fathers and show him what had evolved from a life of grim piety and industriousness. Religion on Earth is a

curiosity, almost as rare as heterosex. Heaven has no God, either, and men and women in love or in sex with people not of their own gender are committing an anachronistic perversion.)

I'd already arranged for a sumptuous "honeymoon" suite on Skye, an airborne resort, before William got out, and we did spend five days there, amusing each other anachronistically. Then we rented a flyer and set out to see the world.

William humored my desire to explore the physical, wild aspects of the world first. We camped in desert, jungle, arctic waste, mountaintops, deserted islands. We had pressor fields that kept away dangerous animals, allowing us a good close look at them while they tried to figure out what was keeping them from lunch, and they were impressive—evolution here had not favored mammal over reptile, and both families had developed large swift predators in a variety of beautiful and ugly designs.

Then we toured the cities, in their finite variety. Some, like the sylvan Threshold where we'd grown and trained our new limbs, blended in with their natural surroundings. This was a 22nd-century esthetic, too bland and obvious for modern tastes. The newer cities, like Skye, flaunted their artificiality.

We were both nervous in Atlantis, under a crushing kilometer of water, with huge glowing beasts bumping against the pressors, dark day and dark night. Perhaps it was too exact a metaphor for our lives in the army, the thin skins of cruiser or fighting suit holding the dark nothingness of space at bay while monsters tried to destroy you.

Many of the cities had no function other than separating soldiers from their money, so in spite of their variety there was a sameness to them. Eat, drink, drug, trip, have or watch sex.

I found the sex shows more interesting than William did, but he was repelled by the men together. It didn't seem to me that what they did was all that different from what we did—and not nearly as alien as tripping for sex, plugging into a machine that delivered to you the image of an ideal mate and cleaned up afterwards.

He did go to a lesbian show with me, and made love with unusual energy that night. I thought there was something there besides titillation; that he was trying to prove something. We kidded each other about it—"Me Tarzan, you Jane," "Me Tarzan, you Heathcliffe." Who on this world would know what we were laughing about?

Prostitution had a new wrinkle, with empathy drugs that joined the servicer and customer in a deep emotional

bond that was real while it lasted, I suppose to keep in competition with the electronic fantasy. We told each other we weren't inclined to try it, though I was curious, and probably would have done it if I'd been alone. I don't think William would have, since the drugs don't work between men and women, or so one of them told us, giggling with wide-eyed embarrassment. The very idea.

We had six months of quiet communion and wild, desperate fun, and still had plenty of money left when it suddenly ended. We were having lunch in an elegant restaurant in Skye, watching the sun sparkle on the calm ocean a klick below, when a nervous private came up, saluted, and gave us our sealed orders.

They were for different places. William was going to Sade-138, a collapsar out in the Greater Magellanic Cloud. I was going to Aleph-10, in the Orion group.

He was a major, the Yod-4 Strike Force commander, and I was a captain, the executive officer for Aleph-10.

It was ridiculous. We'd been together since Basic—five years or half a millennium—and neither of us was leadership material. The army had abundant evidence of that. Yet he was leaving in a week, for Stargate. My Strike Force was mustering here, in orbit around Heaven, in two days.

We flew back to Threshold, half the world away, and

got there just as the administrative offices were opening. William fought and bought his way to the top, trying at the very least to have me reassigned as his XO. What difference could it make? Most of the people he'd muster with at Stargate hadn't even been born yet.

Of course it was not a matter of logic; it was a matter of protocol. And no army in history had ever been so locked in the ice of protocol. The person who *signed* those orders for the yet unborn was probably dead by now.

We had a day and a night together, sad and desperate. At the end, when I had to go into isolation three hours before launch, we were almost deferential with one another, perhaps the way you act in the presence of beloved dead. No poet who ever equated parting with death had ever had a door slam shut like that. Even if we had both been headed for Earth, a few days apart, the time-space geometry of the collapsar jump would guarantee that we arrived decades or even centuries from one another.

And this wasn't Earth. There were 150,000 light years between Sade-138 and Aleph-10. Absolute distance means nothing in collapsar geometry, they say. But if William were to die in a nova bomb attack, the tiny spark of his passing would take 1500 centuries to crawl to Orion, or Earth. Time and distance beyond imagination.

The spaceport was on the equator, of course, on an island they called Pærw'1; Farewell. There was a high cliff, actually a flattened-off pinnacle, overlooking the bay to the east, where William and I had spent silent days fasting and meditating. He said he was going there to watch the launch. I hoped to get a window so that I could see the island, and I did push my way to one when we filed into the shuttle. But I couldn't see the pinnacle from sea level, and when the engines screamed and the invisible force pushed me back into the cushions, I looked but was blinded by tears, and couldn't raise a hand to wipe them away.

2.

Fortunately, I had six hours' slack time after we docked at the space station Athene, before I had to report for ALSC training. Time to pull myself together. I went to my small quarters and unpacked and lay on the bunk for a while. Then I found my way to the lounge and watched the planet spin below, green and white and blue. There were eleven ships in orbit a few clicks away, one a large cruiser, presumably the *Bolivar*, which was going to take us to Aleph-10.

The lounge was huge and almost empty. Two other women in unfamiliar beige uniforms, I supposed Athene staff. They were talking in the strange fast Angel language.

While I was getting coffee, a man walked in wearing tan and green camouflage fatigues like mine. We weren't actually camouflaged as well as the ones in beige, in this room of comforting wood and earth tones.

He came over and got a cup. "You're Captain Potter, Marygay Potter."

"That's right," I said. "You're in Beta?"

"No, I'm stationed here, but I'm army." He offered his hand. "Michael Dobei, Mike. Colonel. I'm your Temporal Orientation Officer."

We carried our coffee to a table. "You're supposed to catch me up on this future, this present?"

He nodded. "Prepare you for dealing with the men and women under you. And the other officers."

"What I'm trying to deal with is this 'under you' part. I'm no soldier, colonel."

"Mike. You're actually a better soldier than you know. I've seen your profile. You've been through a lot of combat, and it hasn't broken you. Not even the terrible experience on Earth."

William and I had been staying on my parents' farm

when we were attacked by a band of looters; Mother and Dad were killed. “That’s in my profile? I wasn’t a soldier then. We’d quit.”

“There’s a lot of stuff in there.” He raised his coffee and looked at me over the rim of the cup. “Want to know what your high school advisor thought of you?”

“You’re a shrink.”

“That used to be the word. Now we’re ‘skinks.’”

I laughed. “That used to be a lizard.”

“Still is.” He pulled a reader out of his pocket. “You were last on Earth in 2007. You liked it so little that you reinlisted.”

“Has it gotten better?”

“Better, then worse, then better. As ever. When I left, in 2318, things were at least peaceful.”

“Drafted?”

“Not in the sense you were. I knew from age ten what I was going to be; everybody does.”

“What? You knew you were going to be a Temporal Adjustment Officer?”

“Uh huh.” He smiled. “I didn’t know quite what that meant, but I sure as hell resented it. I had to go to a special school, to learn this language—SoldierSpeak—but I had to take four years of it, instead of the two that most soldiers do.

“I suppose we’re more regimented on Earth now; creche to grave control, but also security. The crime and anarchy that characterized your Earth are ancient history. Most people live happy, fulfilling lives.”

“Homosexual. No families.”

“Oh, we have families, parents, but not random ones. To keep the population stable, one person is quickened whenever one dies. The new one goes to a couple that has grown up together in the knowledge that they have a talent for parenting; they’ll be given, at most, four children to raise.”

“‘Quickened’—test tube babies?”

“Incubators. No birth trauma. No real uncertainty about the future. You’ll find your troops a pretty sane bunch of people.”

“And what will they find *me*? They won’t resent taking orders from a heterosexual throwback? A dinosaur?”

“They know history; they won’t blame you for being what you are. If you tried to initiate sex with one of the men, there might be trouble.”

I shook my head. “That won’t happen. The only man I love is gone, forever.”

He looked down at the floor and cleared his throat. Can you embarrass a professional skink? “William

Mandella. I wish they hadn't done that. It seems . . . unnecessarily cruel."

"We tried to get me reassigned as his XO."

"That wouldn't have worked. That's the paradox." He moved the cup in circles on the table, watching the reflections dance. "You both have so much time in rank, objective and subjective, that they had to give you commissions. But they couldn't put you under William. The heterosex issue aside, he would be more concerned about your safety than about the mission. The troops would see that, and resent it."

"What, it never happens in your brave new world? You never have a commander falling in love with someone in his or her command?"

"Of course it happens; het or home, love happens. But they're separated and sometimes punished, or at least reprimanded." He waved that away. "In theory. If it's not blatant, who cares? But with you and William, it would be a constant irritant to the people underneath you."

"Most of them have never seen heterosexuals, I suppose."

"None of them. It's detected early and easy to cure."

"Wonderful. Maybe they can cure me."

"No. I'm afraid it has to be done before puberty." He laughed. "Sorry. You were kidding me."

“You don’t think my being het is going to hurt my ability to command?”

“No, like I say, they know how people used to be— besides, privates aren’t supposed to *empathize* with their officers; they’re supposed to follow their orders. And they know about ALSC training; they’ll know how well prepared you are.”

“I’ll be out of the chain of command, anyhow, as Executive Officer.”

“Unless everybody over you dies. It’s happened.”

“Then the army will find out what a mistake it made. A little too late.”

“You might surprise yourself, after the ALSC training.” He checked his watch. “Which is coming up in a couple of hours.”

“Would you like to get together for lunch before that?”

“Um, no. I don’t think you want to eat. They sort of clean you out beforehand. From both ends.”

“Sounds . . . dramatic.”

“Oh, it is, all of it. Some people enjoy it.”

“You don’t think I will.”

He paused. “Let’s talk about it afterwards.”

3.

The purging wasn't bad, since by that time I was limp and goofy with drugs. They shaved me clean as a baby, even my arms and cheeks, and were in the process of covering me with feedback sensors when I dozed off.

I woke up naked and running. A bunch of other naked people were running after me and my friends, throwing rocks at us. A heavy rock stung me under the shoulderblade, knocking my breath away and making me stumble. A chunky Neanderthal tackled me and whacked me on the head twice with something.

I knew this was a simulation, a dream, and here I was passing out in a dream. When I woke up a moment later, he had forced my legs apart and was about to rape me. I clawed at his eyes and rolled away. He came after me, intention still apparent, and my hand fell on his club. I swung it with both hands and cracked his head, spraying blood and brains. He ejaculated in shuddering spurts as he died, feet drumming the ground. God, it was supposed to be realistic, but couldn't they spare me a few details?

Then I was standing in a phalanx with a shield and a long spear. There were men in front of our line, crouching, with shorter spears. All of the weapons were braced at the same angle, presenting a wall of points to

the horses that were charging toward us. This is not the hard part. You just stand firm, and live or not. I studied the light armor of the Persian enemy as they approached. There were three who might be in my area if we unhorsed them, or if their horses stopped.

The horse on my left crashed through. The one on the right reared up and tried to turn. The one charging straight at us took both spears in the breast, breaking the shaft of mine as it skidded, sprawling, spraying blood and screaming with an unearthly high whine, pinning the man in front of me. The unhorsed Persian crashed into my shield and knocked me down as I was drawing my short sword; the hilt of it dug in under my ribs and I almost slashed myself getting it free of the scabbard while I scrambled back to my feet.

The horseman had lost his little round shield but his sword was coming around in a flat arc. I just caught it on the edge of my shield and *as I had been taught* chopped down toward his unprotected forearm and wrist—he twisted away but I nicked him under the elbow, lucky shot that hit a tendon or something. He dropped his sword and as he reached for it with his other hand, I slashed at his face and opened a terrible wound across eye, cheek, and mouth. As he screamed a flap of skin fell away, exposing bloody bone and teeth, and I shifted my weight

for a backhand, aiming for the unprotected throat, and then something slammed into my back and the bloody point of a spear broke the skin above my right nipple; I fell to my knees dying and realized I didn't have breasts; I was a man, a young boy.

It was dark and cold and the trench smelled of shit and rotting flesh. "Two minutes, boys," a sergeant said in a stage whisper. I heard a canteen gurgle twice and took it when it was passed to me, warm gin. I managed not to cough and passed it on down. I checked in the darkness and still didn't have breasts and touched between my legs and that was strange. I started to shake and heard the man next to me peeing, and I suddenly had to go, too. I fumbled with the buttons left-handed, holding onto my rifle, and barely managed to get the thing out in time, peeing hotly onto my hand. "Fix bayonets," the sergeant whispered while I was still going *and instinct took over* and I felt the locking port under the muzzle of my Enfield and held it with my left hand while my right went back and slid the bayonet from its sheath and clicked it into place.

"I shall see you in Hell, Sergeant Simmons." the man next to me said conversationally.

"Soon enough, Rez. Thirty seconds." There was a German machine gun position about eighty yards ahead

and to the right. They also had at least one very good sniper and, presumably, an artillery observer. We were hoping for some artillery support at 1:17, which would signal the beginning of our charge. If the artillery didn't come, which was likely, we were to charge anyhow, riflemen in two short squads in front of grenadiers. A suicide mission, perhaps, but certain death if your courage flags.

I wiped my hand on the greasy, filthy fatigues and thumbed the safety off the rifle. There was already a round chambered. I put my left foot on the improvised step and got a handhold with my left. My knees were water and my anus didn't want to stay closed. I felt tears and my throat went dry and metallic. *This is not real.* "Now," the sergeant said quietly, and I heaved myself up over the lip of the trench and fired one-handed in the general direction of the enemy, and started to run toward them, working the bolt, vaguely proud of not soiling myself. I flopped on the ground and took an aimed shot at the noise of the machine gun, no muzzle flash, and then held fire while squad two rushed by us. A grenadier skidded next to me and said, "Go!" It became "Oh!" when a bullet smacked into him, but I was up and running, another round chambered, four left. A bullet shattered my foot and I took one painful step and fell.

I pulled myself forward, trying to keep the muzzle out of the mud, and rolled into a shallow crater half filled with water and parts of a swollen, decaying body. I could hear another machine gun starting, but I couldn't breathe. I pushed up with both arms to gasp some air above the crater's miasma and a bullet crashed into my teeth.

It wasn't chronological. I went from there to the mist of Breed's Hill, on the British side of what the Americans would call the Battle of Bunker Hill. The deck of a ship, warding off pirates while sails burned; then another ship, deafened by cannon fire while I tried to keep a cool lead on the kamikaze Zero soaring into us.

I flew cloth-winged biplanes and supersonic fighters, used lasers and a bow and arrow and leveled a city with the push of a button. I killed with bullets and bolos and binary-coded decimals. Every second, I was aware that it was a training exercise; I felt terror and sorrow and pain, but only for minutes or hours. And I slept at least as many hours as I was awake, but there was no rest—somehow while sleeping, my brain was filled with procedures, history, regulations.

When they unplugged me after three weeks I was literally catatonic. That was normal, though, and they had drugs that pulled you back into the world. They worked for more than 90% of the new officers. The others were

allowed to drift away.

4.

We had two weeks of rest and rehabilitation—in orbit, unfortunately, not on Heaven—after the ALSC experience. While we were sweating it out in the officers' gym, I met the other line officers, who were as shaken and weak as I was, after three weeks' immersion in oxygenated fluorocarbon, mayhem, and book-learning.

We were also one mass of wrinkles from head to toe, the first day, when our exercises consisted of raising our arms above our heads, and trying to stand up and sit down without help. The wrinkles started to fade in the sauna, as we conversed in tired monosyllables. We looked like big muscular pink babies; they must have shaved or depilated us during the three weeks.

Three of us were male, which was interesting. I've seen lots of naked men, but never a hairless one. I guess we all looked kind of exposed and diagrammatic. Okayawa had an erection, and Morales kidded him about it, but to my relief it didn't go any further than that. It was a socially difficult situation anyhow.

The commander, Angela Garcia, was physically about

ten years older than me, though of course by the calendar she was centuries younger. She was gruff and seemed to be holding a lot in. I knew her slightly, at least by sight; she'd been a platoon leader, not mine, in the Tet-2 disaster. Both her legs had the new-equipment look that my arm did. We'd come to Heaven together, but since her regrowth took three times as long as mine, we hadn't met there. William and I were gone before she was able to come into the common ward.

William had been in many of my ALSC dreams, a shadowy figure in some of the crowds. My father sometimes, too.

I liked Sharn Taylor, the medical officer, right off. She had a cheerful fatalism about the whole thing, and had lived life to the hilt while on Heaven, hiring a succession of beautiful women to help her spend her fortune. She'd run out of money a week early, and had to come back to Threshold and live on army rations and the low-power trips you could get for free. She herself was not beautiful; a terrible wound had ripped off her left arm and breast and the left side of her face. It had all been put back, but the new parts didn't match the old parts too well.

She had a doctor's objectivity about it, though, and professional admiration for the miracles they could accomplish—by the current calendar, she was more than

150 years out of medical school.

Her ALSC session had been totally different from ours, of course; an update of healing skills rather than killing ones. “Most of it is getting along with machines, though, rather than treating people,” she told me while we nibbled at the foodlike substance that was supposed to help us recover. “I can treat wounds in the field, basically to keep someone alive until we can get to a machine. But most modern weapons don’t leave enough to salvage.” She had a silly smile.

“We don’t know how modern the enemy is going to be,” I said. “Though I guess they don’t have to be all *that* modern to vaporize us.” We both giggled and then stopped simultaneously.

“I wonder what they’ve got us on,” she said. “It’s not happyjuice; I can feel my fingertips and have all my peripheral vision.”

“Temporary mood elevator?”

“I hope it’s temporary. I’ll talk to someone.”

Sharn found out that it was just a euphoriant in the food; without it, ALSC withdrawal could bring on deep depression. I’d almost rather be depressed, I thought. We *were*, after all, facing almost certain doom. All but one of us had survived at least one battle in a war where the average survival rate was only 34% per battle. If you

believed in luck, you might believe we'd used all of ours up.

We had the satellite to ourselves for eight days—ten officers waited on by a staff of 30 support personnel—while we got our strength back. Of course friendships formed. It was pretty obvious that it went beyond friendship with Chance Nguyen and Aurelio Morales; they stuck like glue from the first day.

Risa Danyi and Sharn and I made up a logical trio, the three officers out of the chain of command. Risa was the tech officer, a bit older than Sharn and me, with a Ph.D. in systems engineering. She seemed younger, though, born and raised on Heaven. Not actually born, I reminded myself. And never traumatized by combat.

Risa's ALSC had been the same as mine, but she had found it more fascinating than terrifying. She was apologetic about that. She had grown up tripping, and was accustomed to the immediacy and drama of it—and she didn't have any real-life experiences to relate to the dream combat.

Both Risa and Sharn were bawdy by nature and curious about my heterosex, and while we were silly with the euphorants I didn't hold back anything. When I was first in the army, we'd had to obey a rotating "sleeping roster," so I slept with every male private in the company

more than once, and although sleeping together didn't mean you had to have sex, it was considered unsporting to refuse. And of course men are men; most of them would have to go through the motions, literally, even if they didn't feel like it.

Even on board ship, when they got rid of the sleeping roster, there was still a lot of switching around. I was mainly with William, but neither of us was exclusive (which would have been considered odd, in our generation). Nobody was fertile, so there was no chance of accidental pregnancy.

That notion really threw Sharn and Risa. Pregnancy is something that happens to animals. Sharn had seen pictures of the process, medical history, and described it to us in horrifying detail. I had to remind them that I was born that way—I did *that* to my mother, and she somehow forgave me.

Risa primly pointed out that it was actually my father who did it to my mother, which for some reason we all thought was hilarious.

One morning when we were alone together, just looking down at the planet in the lounge, she brought up the obvious.

“You haven't said anything about it, so I guess you've never loved a woman.” She cleared her throat, nervous. “I

mean had sex. I know you loved your mother.”

“No.” I didn’t know whether to elaborate. “It wasn’t that common; I mean I *knew* girls and women who were together. That way.”

“Well.” She patted my elbow. “You know.”

“Uh, yes. I mean yes, I understand. Thanks, but I . . .”

“I just meant, you know, we’re the same rank. It’s even legal.” She laughed nervously; if all the regulations were broken that enthusiastically, we’d be an unruly mob, not an army.

I wasn’t quite sure what to say. Until she actually asked, I hadn’t thought about the possibility except as an abstraction. “I’m still grieving for William.” She nodded and gave me another pat and left quietly.

But of course that wasn’t all of it. I could visualize her and Sharn, for instance, having sex; I’d seen it on stage and cube often enough. But I couldn’t put myself in their place. Not the way I could visualize myself being with one of the men, especially Sid, Isidro Zhulpa. He was quiet, introspective, darkly beautiful. But too well balanced to contemplate a sexual perversion involving me.

I was still jangled about fantasy, imagination; real and artificial memories. I knew for certain that I had never killed anyone with a club or a knife, but my body

seemed to have a memory of it, more real than the mental picture. I could still feel the ghost of a penis and balls, and breastlessness, since all of the ALSC combat templates were male. Surely that was more alien than lying down with another woman. When I was waiting for William to get out of his final range-and-motion stage, reading for two days, I'd had an impulse to try tripping, plugging into a lesbian sex simulation, the only kind that was available for women.

For a couple of reasons, I didn't do it. Now that it's too late—the only trips on Athene are ALSC ones—I wish I had. Because it's not as simple as “I accept this because it's the way they were brought up,” with the implied condescension that my pedestal of normality entitles me.

Normality. I'm going to be locked up in a can with 130 other people for whom my most personal, private life is something as exotic as cannibalism. So rare they don't even have an epithet for it. I was sure they'd come up with one.

5.

The lounge was a so-called “plastic room”; it could

reform itself into various modes, according to function. One of the Athene staff had handed over the control box to me—my first executive function as executive officer.

When the troop carriers lined up outside for docking, I pushed the button marked “auditorium,” and the comfortable wood grain faded to a neutral ivory color as the furniture sank into the floor, and then rose up again, extruding three rows of seats on ascending tiers. The control box asked me how many seats to put on the stage in front. I said six and then corrected myself to seven. The Commodore would be here, for ceremony’s sake.

As I watched the Strike Force file into the auditorium, I tried to separate the combat veterans from the Angels. There weren’t too many of the latter; only fourteen out of the 130 were born on Heaven. For a good and unsettling reason.

Major Garcia waited until all the seats were filled, and then she waited a couple of minutes longer, studying the faces, maybe doing the same kind of sorting. Then she stood up and introduced the commodore and the other officers, down to my echelon, and got down to business.

“I’m certain that you have heard rumors. One of them is true.” She took a single notecard from her tunic pocket and set it on the lectern. “One hundred sixteen of us have been in combat before. All wounded and brought here to

Heaven. For repairs and then rest.

“You may know that this concentration of veterans is unusual. The army values experience, and spreads it around. A group this size would normally have about twenty combat veterans. Of course this implies that we face a difficult assignment.

“We are attacking the oldest known enemy base.” She paused. “The Taurans established a presence on the portal planet of the collapsar Aleph-10 more than two hundred years ago. We’ve attacked them twice, to no effect.”

She didn’t say how many survivors there had been from those two attacks. I knew there had been none.

“If, as we hope, the Taurans have been out of contact with their home planet for the past two centuries, we have a huge technological advantage. The details of this advantage will not be discussed until we are under way.” An absurd but standard security procedure. A spying Tauran could no more disguise itself and come aboard than a moose could. No one here could be in the pay of the Taurans. The two species had never exchanged anything but projectiles.

“We are three collapsar jumps away from Aleph-10, so we will have eleven months to train with the new weapon systems . . . with which we will defeat them.” She allowed herself a bleak smile. “By the time we reach

them, we may be coming from four hundred years in their future. That's the length of time that elapsed between the defeat of the Spanish Armada and the first nuclear war.”

Of course relativity does not favor one species over the other. The Taurans on Aleph-10 might have had visitors from their own future, bearing gifts.

The troops were quiet and respectful, absorbing the fraction of information that Major Garcia portioned out. I supposed most of them knew that things were not so rosy, even the inexperienced Angels. She gave them a few more encouraging generalities and dismissed them to their temporary billets. We officers were to meet with her in two hours, for lunch.

I spent the intervening time visiting the platoon billets, talking with the sergeants who would actually be running the show, day by day. I'd seen their records but hadn't met any of them except Cat Verdeur, who had been in physical therapy with me. We both had right arm replacements, and as part of our routine we were required to arm-wrestle every day, apologetic about the pain we were causing each other. She was glad to see me, and said she would have let me win occasionally if she'd known I was going to outrank her.

The officers' lounge was also a plastic room, which I hadn't known. It had been a utilitarian meeting place

before, with machines that dispensed simple food and drink. Now it was dark wood and intricate tile; linen napkins and crystal. Of course the wood felt like plastic and the linen, like paper, but you couldn't have everything.

Nine of us showed up on the hour, and the major came in two minutes later. She greeted everyone and pushed a button, and the cooks Jengyi and Senff appeared with real food and two carafes of wine. Aromatic stir-fried vegetables and zoni, which resembled large shrimp.

“Let's enjoy this while we can,” she said. “We'll be back on recycled Class A's soon enough.” Athene had room enough for the luxury of hydroponics and, apparently, fish tanks.

She asked us to introduce ourselves, going around the table's circle. I knew a little bit about everyone, since my XO file had basic information on the whole Strike Force, and extensive dossiers of the officers and noncoms. But there were surprises. I knew that the major had survived five battles, but didn't know she'd been to Heaven four times, which was a record. I knew her second-in-command, Chance Nguyen, came from Mars, but didn't know he was from the first generation born there, and was the first person drafted from his planet—there had been a huge argument over it, with separatists saying the

Forever War was Earth's war. But at that time, Earth could still threaten to pull the plug on Mars. The red planet was self-sufficient now, Chance said, but he'd been away for a century, and didn't know what the situation was.

Lillian Mathes just came from Earth, with less than twenty years' collapsar lag, and she said they weren't drafting from Mars at that time; it was all tied up in court. So Chance might be the only Martian officer in service.

He had a strange way of carrying himself and moving, wary and careful, swimming through this unnaturally high gravity. He told me he'd trained for a Martian year, wearing heavier and heavier weights, before going to Stargate and his first assignment.

All of them were scholarly and athletic, but only Sid, Isidro Zhulpa, had actually been both a scholar and an athlete. He'd played professional baseball for a season, but quit to pursue his doctorate in sociology. He'd gotten his appointment as a junior professor the day before his draft notice. His skin was so black as to be almost blue; with his chiseled features and huge muscularity, he looked like some harsh African god. But he was quiet and modest, my favorite.

I mainly talked with him and Sharn through the meal, chatting about everything but our immediate future. When

everything was done, the cooks came in with two carts and cleared the table, leaving tea and coffee. Garcia waited until all of us had been served and the privates were gone.

“Of course we don’t have the faintest idea of what’s waiting for us at Aleph-10,” the major said. “One thing we have been able to find out, which I don’t think any of you have been told, is that we know how the second Strike Force bought it.”

That was something new. “It was like a mine field. A matrix of nova bombs in a belt around the portal planet’s equator. We’re assuming it’s still there.”

“They couldn’t detect it and avoid it?” Risa asked.

“It was an active system. The bombs actually chased them down. They detonated four, coming closer and closer, until the fifth got them. The drone that was recording the action barely got away; one of the bombs managed to chase it through the first collapsar jump.

“We can counter the system. We’re being preceded by an intelligent drone squad that should be able to detonate all of the ring of nova bombs simultaneously. It should make things pretty warm on the ground, as well as protecting our approach.”

“We don’t know what got the first Strike Force?” Sid asked.

Garcia shook her head. “The drone didn’t return. All we can say for sure is that it wasn’t the same thing.”

“How so?” I asked.

“Aleph-10’s easily visible from Earth; it’s about eighty light years away. They would have detected a nova bomb 120 years ago, if there’d been one. The assumption has to be that they attacked in a conventional way, as ordered, and were destroyed. Or had some accident on the way.”

Of course they hadn’t beamed any communication back to Earth or Stargate. We still didn’t. The war was being fought on portal planets, near collapsars, which were usually desolate, disposable rocks. It would only take one nova bomb to vaporize the Stargate station; perhaps three to wipe out life on Earth.

So we didn’t want to give them a roadmap back.

6.

A lot of the training over the next eleven months had to do with primitive weapons, which explained why so much of my ALSC time had been spent practicing with bows and arrows, spears, knives, and so forth. We had a new thing called a “stasis field,” which made a bubble

inside which you *had* to use simple tools: no energy weapons worked.

In fact, physics itself didn't work too well inside a stasis field; chemistry, not at all. Nothing could move faster than 16.3 meters per second inside—including elementary particles and light. (You could see inside, but it wasn't light; it was some tachyon thing.) If you were exposed to the field unprotected, you'd die instantly of brain death—no electricity—and anyhow freeze solid in a few seconds. So we had suits made of stuff like tough crinkly aluminum foil, full of uncomfortable plumbing and gadgets so that everything recycled. You could live inside the stasis field, inside the suit, indefinitely. Until you went mad.

But one rip, even a pinprick, in the fabric of the suit, and you were instantly dead.

For that reason, we didn't practice with the primitive weapons inside the field. And if you had a training accident that caused the smallest scratch, on yourself or anyone else, you got to meditate on it for a day in solitary confinement. Even officers; my carelessness with arrow points cost me a long anxious day in darkness.

Only one platoon could fit in the gym at a time, so at first I trained with whoever was using it when I got a few hours off from my other duties. After awhile I arranged

my schedule so that it was always the fourth platoon. I liked both Aurelio Morales, the squad leader, and his staff sergeant, Karl Hencken. But mainly I liked Cat Verdeur.

I don't remember a particular time when the chumminess suddenly turned into sex; there was nothing like a proposition and a mad fling. We were physically close from the beginning, because of our shared experience at Threshold. Then we were natural partners for hand-to-hand combat practice, being about the same physical age and condition. That was a rough kind of intimacy, and the fact that officers and noncoms had a shower separate from the other men and women gave us another kind. Aurelio and Karl took one side, and Cat and I took the other. We sort of soaped each other's backs, and eventually fronts.

Being a sergeant, Cat didn't have her own billet; she slept in a wing with the other women in her platoon. But one night she showed up at my door on the verge of tears, with a mysterious problem we'd both been dealing with: sometimes the new arm just doesn't feel like it belongs. It obeys your commands, but it's like a separate creature, grafted on, and the feeling of its separateness can take over everything. I let her cry on my shoulder, the good one, and then we shared my narrow bed for the night. We

didn't do anything that we hadn't done many times in the shower, but it wasn't playful. I lay awake thinking, long after she fell asleep with her cheek on my breast.

I still loved William, but barring a miracle I would never see him again. What I felt for Cat was more than just friendship, and by her standards and everyone else's there was nothing odd about it. And there was no way I could have had a future with Sid or any of the other men.

When I was young there'd been a sarcastic song that went "If I can't be with the one I love, I'll love the one I'm with." I guess that sort of sums it up.

I went to Elise Durack, the Strike Force psychologist, and she helped me through some twists and turns. Then Cat and I went together to Octavia Poll, the female sex counselor, which wound up being a strange and funny four-way consultation with Dante Norelius, the male counselor. That resulted in a mechanical contrivance that we giggled about but occasionally used, which made it more like sex with a man. Cat sympathized with my need to hold on to my past, and said she didn't mind that I was remembering William when I was with her. She thought it was romantic, if perverse.

I started to bring the subject up with the major, and she brushed it off with a laugh. Everyone who cared aboard ship knew about it, and it was a good thing; it

made me seem less strange to them. If I had been in Cat's platoon, above her in the direct chain of command, she would be routinely assigned to another platoon, which had been done several times.

(The logic of that is clear, but it made me wonder about Garcia herself. If she became in love with another woman, there wouldn't be any way to put that woman someplace outside of her command. But as far as I knew, she didn't have anybody.)

Cat more or less moved in with me. If some people in her platoon resented it, more were just as glad not to have their sergeant watching over them every hour of the day. She usually stayed with them until first lights out, and then walked down the corridor to my billet—often passing other people on similar missions. Hard to keep secrets of that sort in a spaceship, and not many tried.

There was an element of desperation in our relationship, doomed souls sharing a last few months, but that was true of everybody's love unless they were absolutely myopic one-day-at-a-timers. If the numbers held, only 34% of us had any future beyond Elephant, which is what everybody called Aleph-10 by the time we angled in for our second collapsar jump.

William had tried in a resigned way to explain the physics of it all, the first time we did a jump, but math

had defeated me in college long before calculus kicked me permanently into majoring in English. It has to do with acceleration. If you just fell toward a collapsar, the way normal matter does, you would be doomed. For some reason you and the people around you would seem to be falling forever, but to the outside world, you would be snuffed out instantly.

Well, sure. Obviously nobody ever did the experiment.

Anyhow, you accelerate toward the collapsar's "event horizon," which is what it has instead of a surface, at a pre-calculated speed and angle, and you pop out of another collapsar umpty light-years away—maybe five, maybe five million. You better get the angle right, because you can't always just reverse things and come back.

(Which we hoped was all that happened to the first Elephant Strike Force. They might be on the other side of the Galaxy, colonizing some nice quiet world. Every cruiser did carry a set of wombs and a creche, against that possibility, though the major rolled her eyes when she described it. Purely a morale device, she said; they probably didn't work. I wondered whether, in that case, people might be able to grit their teeth and try to make babies the old-fashioned way.)

Since we were leaving from Heaven, we were required to make at least two collapsar jumps before “acquiring” Elephant. That soaked up two centuries of objective time, if such a thing exists. To us it was eleven fairly stressful months. Besides the training with the old-fashioned weapons, the troops had to drill with their fighting suits and whatever specialized weapon system they were assigned to, in case the stasis field didn’t work or had been rendered useless by some enemy development.

Meanwhile, I did my Executive Officer work. It was partly bookkeeping, which is almost trivial aboard ship, since nothing comes in and nothing goes out. The larger part was a vague standing assignment to keep up the troops’ morale.

I was not well qualified for that; perhaps less qualified than anybody else aboard. Their music didn’t sound like music to me. Their games seemed pointless, even after they’d been relentlessly explained. The movies were interesting, at least as anthropology, and the pleasures of food and drink hadn’t changed much, but their sex lives were still pretty mysterious to me, in spite of my affection for Cat and the orgasms we exchanged. If a man and a woman walked by, I was still more interested in the man. So I did love a woman, but as an

actual lesbian I was not a great success.

Sometimes that gave me comfort, a connection to William and my past. More often it made me feel estranged, helpless.

I did have eight part-time volunteers, and one full-time subordinate, Sergeant Cody Waite. He was not an asset. I think the draft laws on Earth, the Elite Conscription Act, were ignored on Heaven. In fact, I would go even further (to make a reference that nobody on the ship would understand) and claim that there was a Miltonian aspect to his arrival. He had been expelled from Heaven, for overweening pride. But he had nothing to be proud of, except his face and muscles. He had the intelligence of a hamster. He did look like a Greek god, but for me what that meant was that every time I needed him to do something, he was down in the gym working out on the machines. Or off getting his rectum reamed by some adoring guy who didn't have to talk with him. He could read and write, though, so eventually I found I could keep him out of the way by having him elaborate on my weekly reports. He could take "This week was the same as last week," and turn it into an epic of relentless tedium.

I was glad to be out of the chain of command. You train people intensively for combat and then put them into

a box for eleven months of what? More training for combat. Nobody's happy and some people snap.

The men are usually worse than the women—or, at least, when the women lose control it tends to be a shouting match rather than fists and feet. Cat had a pair who were an exception, though, and it escalated to attempted murder in the mess hall.

This was ten days before the last collapsar jump—everybody on the ragged edge—between Lain Mayfair and “Tiny” Keimo, who was big enough to take on most of the men. Lain tried to cut her throat, from behind, and Tiny broke her arm at the elbow while everybody else was diving for cover, and was seriously strangling her—trying to kill her before she herself bled to death—when the cook J.J. ran over and brained the big woman with a frying pan.

While they were still in the infirmary there was a summary court martial. With the consistent testimony of forty witnesses, Major Garcia didn't have any choice: she sentenced Lain Mayfair to death for attempted murder. She administered the lethal injection herself.

I was required to be a witness, and more, and it was not the high point of my day. Mayfair was bedridden and, I think, slightly sedated. Garcia explained the reason for the verdict and asked Mayfair whether she would prefer

the dignity of taking the poison herself. She didn't say anything, just cried and shook her head. Two privates held her down by the shoulders while Garcia took her arm and administered the popper. Mayfair turned pale and her eyes rolled up. She shook convulsively for a few seconds and was dead.

Garcia didn't show any emotion during the ordeal. She whispered to me that she would be in her quarters if anybody really needed her, and left quickly.

I had to supervise the disposal of the body. I had two medics wrap her tightly in a sheet and put her on a gurney. We had to roll it down the main corridor, everybody watching. I helped the two of them carry her into the airlock. She was starting to stiffen, but her body wasn't even cold.

I had a friend read a prayer in Mayfair's language, and asked the engineer for maximum pressure in the airlock, and then popped it. Her body spun out into its lonely, infinite grave.

I went back to the infirmary and found Tiny inconsolable. She and Mayfair had been lovers back on Stargate. Everything had gone wrong, nothing made sense, why why why why? My answer was to have Sharn give her a tranquilizer. I took one myself.

7.

We came tearing out of the Elephant's collapsar about one minute after the defense phalanx, the ten highspeed intelligent drones that had multiple warheads, programmed to take out the portal planet's nova bomb minefield.

The first surprise was that the minefield wasn't there. The second surprise was that the Taurans weren't, either. Their base seemed intact but long deserted, cold.

We would destroy it with a nova bomb, but first send a platoon down to investigate it. Garcia asked that I go along with them. It was Cat's platoon. It would be an interesting experience to share, so long as a boobytrap didn't blow us off the planet. The deserted base could be bait.

We would have a nova bomb with us. Either Morales or I could detonate it, if we got into a situation that looked hopeless. Or Garcia could do it from orbit. I was sure Garcia could do it. Not so sure about me or Aurelio.

But while we were down in the prep bay getting into our fighting suits, there came the third surprise, the big one. I later saw the recording. The main cube in the control room lit up with a two-dimensional picture of a young man in an ancient uniform. He popped in and out

of three dimensions while he spoke: “Hello, Earth ship. Do you still use this frequency? Do you still use this language?”

He smiled placidly. “Of course you won’t respond at first; neither would I. This could be a trap. Feel free to investigate at long range. I am calling from a different portal planet. I’m currently 12.23 million kilometers from you, on the plane of the ecliptic, on an angle of 0.54 radians with respect to the collapsar. As you probably know by now.

“I am a descendent of the first Strike Force, nearly half a millennium ago. I await your questions.” He sat back in his chair, in a featureless room. He crossed his legs and picked up a notebook and began flipping through it.

We immediately got a high-resolution image of the portal planet. It was small, as they usually are; cold and airless except for the base. It was actually more like a town than a base, and it was as obvious as a beacon. It wasn’t enclosed; air was evidently held in by some sort of force field. It was lit up by an artificial sun that floated a few kilometers above the surface.

There was an ancient cruiser in orbit, its dramatic sweeping streamlined grace putting our functional clunkiness to shame. There were also two Tauran vessels.

None of them was obviously damaged.

All of us 5-and-above officers were on the bridge when we contacted the planet. Commodore Sidorenko sat up front with Garcia; he technically outranked her in this room, but it was her show, since the actual business was planetside.

I felt a little self-conscious, having come straight from the prep bay. Everyone else was in uniform; I was just wearing the contact net for the fighting suit. Like a layer of silver paint.

Garcia addressed the man in the chair. “Do you have a name and a rank?”

It took about forty seconds for the message to get to him, and another forty for his response: “My name is Eagle. We don’t have ranks; I’m here because I can speak Old Standard. English.”

You could play a slow chess game during this conversation, and not miss anything. “But your ancestors defeated the Taurans, somehow.”

“No. The Taurans took them prisoner and set them up here. Then there was another battle, generations ago. We never heard from them again.”

“But we lost that battle. Our cruiser was destroyed with all hands aboard.”

“I don’t know anything about that. Their planet was

on the other side of the collapsar when the battle happened. The people here saw a lot of light, distorted by gravitational lensing. We always assumed it was some robotic assault, since we didn't hear anything from either side, afterwards. I'm sorry so many people died."

"What about the Taurans who were with you? Are there Taurans there now?"

"No; there weren't any then, and there aren't any now. Before the battle they showed up now and then."

"But there are—" she began.

"Oh, you mean the Tauran ships in orbit. They've been there for hundreds of years. So has our cruiser. We have no way to get to them. This place is self-sufficient, but a prison."

"I'll contact you again after I've spoken to my officers." The cube went dark.

Garcia swiveled around, and so did Sidorenko, who spoke for the first time: "I don't like it. He could be a simulation."

Garcia nodded. "That assumes a lot, though. And it would mean they know a hell of a lot more about us than we do about them."

"That's demonstrable. Four hundred years ago, they were supposedly able to build a place for the captives to stay. I don't believe we would have any trouble

simulating a Tauran, given a couple of hundred captives and that much time for research.”

“I suppose. Potter,” she said to me, “go down and tell the fourth platoon there’s a slight change of plans, but we’re still going in ready for anything. I think the best thing we can do is get over there and make physical contact as soon as possible.”

“Right,” Siderenko said. “We don’t have the element of surprise any more, but there’s no percentage in sitting here and feeding them data, giving them time to revise their strategy. If there *are* Taurans there.”

“Have your people prepped for five gees,” Garcia said to me. “Get you there in a few hours.”

“Eight,” Siderenko said. “We’ll be about ten hours behind you.”

“Wait in orbit?” I said, knowing the answer.

“You wish. Let’s go down to the bay.”

We had a holo of the base projected down there and worked out a simple strategy. Twenty-two of us in fighting suits, armed to the teeth, carrying a nova bomb and a stasis field, surround the place and politely knock on the door. Depending on the response, we either walk in for tea or level the place.

Getting there would not be so bad. Nobody could endure four hours of five-gee acceleration, then flip for

four hours of deceleration, unprotected. So we'd be clamshelled in the fighting suits, knocked out and superhydrated. Eight hours of deep sleep and then maybe an hour to shake it off and go be a soldier. Or a guest for tea.

Cat and I made the rounds in the cramped fighter, seeing that everybody was in place, suit fittings and readouts in order. Then we shared a minute of private embrace and took our own places.

I jacked the fluid exchange into my hip fitting and all of the fear went away. My body sagged with sweet lassitude and I let the soft nozzle clasp my face. I was still aware enough to know that it was sucking all of the air out of my lungs and then blowing in a dense replacement fluid, but all I felt was a long low-key orgasm. I knew that this was the last thing a lot of people felt, the fighter blown to bits moments or hours later. But the war offered us many worse ways to die. I was sound asleep before the acceleration blasted us into space. Dreaming of being a fish in a warm and heavy sea.

8.

The chemicals won't let you remember coming out of it,

which is probably good. My diaphragm and esophagus were sore and tired from getting rid of all the fluid. Cat looked like hell and I stayed away from mirrors, while we towed off and put on the contact nets and got back into the fighting suits for the landing.

Our strategy, such as it was, seemed even less appealing, this close to the portal planet. The two Tauran cruisers were old models, but they were a hundred times the size of our fighter, and since they were in synchronous orbit over the base, there was no way to avoid coming into range. But they did let us slide under them without blowing us out of the sky, which made Eagle's story more believable.

It was pretty obvious, though, that our primary job was to be a target, for those ships and the base. If we were annihilated, the *Bolivar* would modify its strategy.

When Morales said we were going to just go straight in and land on the strip beside the base, I muttered, "Might as well be hung for a sheep as a goat," and Cat, who was on my line, asked why anyone would hang a sheep. I told her it was hard to explain. In fact, it was just something my father used to say, and if he'd ever explained it, I'd forgotten.

The landing was loud but feather-light. We unclamped our fighting suits from their transport

positions and practiced walking in the one-third gee of the small planet. “They should’ve sent Goy,” Cat said, which is what we called Chance Nguyen, the Martian. “He’d be right at home.”

We moved out fast, people sprinting to their attack positions. Cat went off to the other side of the base. I was going with Morales, to knock on the door. Rank and its privileges. The first to die, or be offered tea.

The buildings on the base looked like they’d been designed by a careful child. Windowless blocks laid out on a grid. All but one were sand-colored. We walked to the silver cube of headquarters. At least it had “HQ” in big letters over the airlock.

The shiny front door snicked up like a guillotine in reverse. We went through with dignified haste, and it slammed back down. The blade, or door, was pretty massive, for us to “hear” it in a vacuum; vibration through our boots.

Air hissed in—that we *did* hear—and after a minute a door swung open. We had to sidle through it sideways, because of the size of our fighting suits. I suppose we could have just walked straight through, enlarging it in the process, and in fact I considered that as I sidled. It would prevent them from using the airlock, until they could fix it.

Then another door, a metal blast door half a meter thick, slid open. Seated at a plain round table were Eagle and a woman who looked like his twin sister. They wore identical sky-blue tunics.

“Welcome to Alcatraz,” Eagle said. “The name is an old joke.” He gestured at the four empty chairs. “Why not get out of your suits and relax?”

“That would be unwise,” Morales said.

“You have us surrounded, outside. Even if I were inclined to do you harm, I wouldn’t be that foolish.”

“It’s for your own protection,” I extemporized. “Viruses can mutate a lot in 400 years. You don’t want us sharing your air.”

“That’s not a problem,” the woman said. “Believe me. My bodies are very much more efficient than yours.”

““My bodies’?” I said.

“Oh, well.” She made a gesture that was meaningless to me, and two side doors opened. From her side a line of women walked in, all exact copies of her. From his side, copies of him.

There were about twenty of each. They stared at us with identical bland expressions, and then said in unison, “I have been waiting for you.”

“As have I.” A pair of naked Taurans stepped into the room.

Both our laserfingers came up at once. Nothing happened.

“I’m sorry I had to lie to you,” one of the women said.

I braced myself to die. I hadn’t seen a live Tauran since the Yod-4 campaign, but I’d fought hundreds of them in the ALSC. They didn’t care whether they lived or died, so long as they died killing a human.

“There is much to be explained,” the Tauran said in a thin, wavering voice, its mouth-hole flexing and contracting. Its body was covered with a loose tunic like the humans’, hiding most of the wrinkled orange hide and strange limbs, and the pinched antlike thorax.

The two of them blinked slowly in unison, in what might have been a social or emotional gesture, a translucent membrane sliding wetly down over the compound eyes. The tassels of soft flesh where their noses should have been stopped quivering while they blinked.

“The war is over. In most places.”

The man spoke. “Human and Tauran share Stargate now. There is Tauran on Earth and human on its home planet, J’sardlkuh.”

“Humans like you?” Morales said. “Stamped out of a machine?”

“I come from a kind of machine, but it is living, a womb. Until I was truly *one*, there could be no peace.

When there were billions of us, all different, we couldn't understand peace."

"Everyone on Earth is the same?" I said. "There's only one kind of human?"

"There are still survivors of the Forever War, like yourselves," the female said. "Otherwise, there is only one human. As there is only one Tauran. I was patterned after an individual named Khan. I call myself Man."

There were sounds to my left and right, like distant thunder. Nothing in my communicator.

"Your people are attacking," the male said, "even though I have told them it is useless."

"Let me talk to them!" Morales said.

"You can't," the female said. "They all assembled under the stasis field, when they saw the Taurans through your eyes. Now their programmed weapons attack. When those weapons fail, they will try to walk in with the stasis field."

"This has happened before?" I said.

"Not here, but other places. The outcome varies."

"Your stasis field," a Tauran said, "has been old to us for more than a century. We used a refined version of it to keep you from shooting us a minute ago."

"You say the outcome varies," Morales said to the female, "so sometimes we win?"

“Even if you killed me, you wouldn’t ‘win’; there’s nothing to win anymore. But no, the only thing that varies is how many of you survive.”

“Your cruiser *Bolivar* may have to be destroyed,” a Tauran said. “I assume they are monitoring this conversation. Of course they are still several light-minutes away. But if they do not respond in a spirit of cooperation, we will have no choice.”

Garcia did respond in less than a minute, her image materializing behind the Taurans. “Why don’t we invite *you* to act in a spirit of cooperation,” she said. “If none of our people are hurt, none of yours will be.”

“That’s beyond my control,” the male said. “Your programmed weapons are attacking; mine are defending. I think that neither is programmed for mercy.”

The female continued. “That they still survive is evidence of our good intentions. We could deactivate their stasis field from outside.” There was a huge *thump* and Man’s table jumped up an inch. “Most of them would be destroyed in seconds if we did that.”

Garcia paused. “Then explain why you haven’t.”

“One of my directives,” the male said, “is to minimize casualties among you. There is a genetic diversity program, which will be explained to you at Stargate.”

“All right,” Garcia said. “Since I can’t communicate

with them otherwise, I'll let you deactivate the stasis field—but at the same time, of course, you have to turn off your automatic defenses. Otherwise they'd be slaughtered.”

“So you invite us to be slaughtered instead,” he said. “Me and your two representatives here.”

“I'll tell them to cease fire immediately.”

All this conversation was going on with a twenty-second time lag. So “immediately” would be a while in coming.

Without comment, the two Taurans disappeared, and the forty duplicate humans filed back through the dome.

“All right,” Eagle said, “perhaps there is a way around this time lag. Which of you is the ranking officer here?”

“I am,” I said.

“Most of my individuals have returned to an underground shelter. I will turn off your stasis field and our defenses simultaneously.

“Tell them they must stop firing immediately. If we die, our defenses resume, and they won't have the protection of the stasis field.”

I chinned the command frequency, which would put me in contact with Cat and Sergeant Hencken as soon as the field disappeared.

“I don’t like this,” Morales said. “You can turn your weapons on and off with a thought?”

“That’s correct.”

“We can’t. When Captain Potter gives them the order, they have to understand and react.”

“But it’s just turning off a switch, is it not?” There was another huge bang, and a web of cracks appeared in the wall to my left. Man looked at it without emotion.

“First a half-dozen people have to understand the order and decide to obey it!”

The male and female smiled and nodded in unison. “Now.”

Thumbnail pictures of Karl and Cat appeared next to Morales. “Cat! Karl! Have the weapons units cease fire immediately!”

“What’s going on?” Karl said. “Where’s the stasis field?”

“They turned it off. Battle’s over.”

“That’s right,” Morales said. “Cease fire.”

Cat started talking to he squads. Karl stared for a second and started to do the same.

Not fast enough. The left wall exploded in a hurricane of masonry and chunks of metal. The two Men were suddenly bloody rags of shredded flesh. Morales and I were knocked over by the storm of rubble. My armor was

breached in one place; there was a ten-second beep while it repaired itself.

Then vacuum silence. The one light on the opposite wall dimmed and went out. Through the hole our cannon had made, the size of a large window, the starlit wasteland strobed in silent battle.

The three thumbnails were gone. I chinned down again for command freek. “Cat? Morales? Karl?”

Then I turned on a headlight and saw Morales was dead, his suit peeled open at the chest, lungs and heart in tatters under ribs black with dried blood.

I chinned sideways for the general freek and heard a dozen voices shouting and screaming in confusion.

So Cat was probably dead, and Karl too. Or maybe their communications had been knocked out.

I thought about that possibility for a few moments, hoping and rejecting hope, listening to the babble. Then I realized that if I could hear all those privates, corporals, they could hear me.

“This is Potter,” I said. “*Captain* Potter,” I yelled.

I stayed on the general freek and tried to explain the strange situation. Five did opt to stay outside. The others met me under the yellow light, which framed the top of a square black blast door that rose out of the ground at a forty-five degree angle, like our tornado shelter at home,

thousands of years ago, hundreds of light years away. It slid open and we went in, carrying four fighting suits whose occupants weren't responding but weren't obviously dead.

One of those was Cat, I saw as we came into the light when the airlock door closed. The back of the helmet had a blast burn, but I could make out VERDEUR.

She looked bad. A leg and an arm were missing at shoulder and thigh. But they had been snipped off by the suit itself, the way my arm had been at Tet-2.

There was no way to tell whether she was alive, since the telltale on the back of the helmet was destroyed. The suit had a biometric readout, but only a medic could access it directly, and the medic and his suit had been vaporized.

Man led us into a large room with a row of bunks and a row of chairs. There were three other Men there, but no Taurans, which was probably wise.

I popped out of my suit and didn't die, so the others did the same, one by one. The amputees we left sealed in their suits, and Man agreed that it was probably best. They were either dead or safely unconscious: if the former, they'd been dead for too long to bring back; if the latter, it would be better to wake them up in the *Bolivar's* surgery. The ship was only two hours away, but it was a

long two hours for me.

As it turned out, she lived, but I lost her anyhow, to relativity. She and the other amputees were loaded, still asleep, onto the extra cruiser, and sent straight to Heaven.

They did it in one jump, no need for secrecy anymore, and we went to Stargate in one jump aboard *Bolivar*.

When I'd last been to Stargate it had been a huge space station; now it was easily a hundred times as large, a man-made planetoid. Tauran-made, and Man-made.

We learned to say it differently: *Man*, not man.

Inside, Stargate was a city that dwarfed any city on the Earth I remembered—though they said now there were cities on Earth with a billion Men, humans, and Taurans.

We spent weeks considering and deciding on which of many options we could choose to set the course of the rest of our lives. The first thing I did was check on William, and no miracle had happened; his Strike Force had not returned from Sade-138. But neither had the Tauran force sent to annihilate them.

I didn't have the option of hanging around Stargate, waiting for him to show up; the shortest scenario had his outfit arriving in over 300 years. I couldn't really wait for Cat, either; at best she would get to Stargate in 35 years. Still young, and me in my sixties. If, in fact, she chose to

come to Stargate; she would have the option of staying on Heaven.

I could chase her to Heaven, but then *she* would be 35 years older than me. If we didn't pass one another in transit.

But I did have one chance. One way to outwit relativity.

Among the options available to veterans was Middle Finger, a planet circling Mizar. It was a nominally heterosexual planet—het or home was now completely a matter of choice; Man could switch you one way or the other in an hour.

I toyed with the idea of “going home,” becoming lesbian by inclination as well as definition. But men still appealed to me—men not Man—and Middle Finger offered me an outside chance at the one man I still truly loved.

Five veterans had just bought an old cruiser and were using it as a time machine—a “time shuttle,” they called it, zipping back and forth between Mizar and Alcor at relativistic speed, more than two objective years passing every week. I could buy my way onto it by using my back pay to purchase antimatter fuel. I could get there in one collapsar jump, having left word for William, and if he lived, could rejoin him in a matter of months or years.

The decision was so easy it was not a decision; it was as automatic as being born. I left him a note:

11 Oct 2878

William —

All this is in your personnel file. But knowing you, you might just chuck it. So I made sure you'd get this note.

Obviously, I lived. Maybe you will, too. Join me.

I know from the records that you're out at Sade-138 and won't be back for a couple of centuries. No problem.

I'm going to a planet they call Middle Finger, the fifth planet out from Mizar. It's two collapsar jumps, ten months subjective. Middle Finger is a kind of Coventry for heterosexuals. They call it a "eugenic control baseline."

No matter. It took all of my money, and all the money of five other old-timers, but we bought a cruiser from UNEF. And we're using it as a time machine.

So I'm on a relativistic shuttle, waiting for you. All it does is go out five light years and come back to Middle Finger, very fast. Every ten years I age about a month. So if you're on schedule and still alive, I'll only be twenty-eight when you get here. Hurry!

I never found anybody else and I don't want anybody else. I don't care whether you're ninety years old or thirty.

If I can't be your lover, I'll be your nurse.

— Marygay

9.

From *The New Voice*, Paxton, Middle Finger 24-6

14/2/3143

OLD-TIMER HAS FIRST BOY

Marygay Potter-Mandella (24 Post Road, Paxton) gave birth Friday last to a fine baby boy, 3.1 kilos.

Marygay lays claim to being the second-”oldest” resident of Middle Finger, having been born in 1977. She fought through most the Forever War and then waited for her mate on the time shuttle, 261 years.

The baby, not yet named, was delivered at home with the help of a friend of the family, Dr. Diana Alsever-Moore.

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Joe Haldeman writes for a living and teaches as an absorbing hobby. He has been a full-time writer since 1969, except for the occasional teaching and a short tenure as senior editor of *Astronomy Magazine*. He has taught writing

at MIT every fall semester since 1983. Main hobbies are astronomy, bicycling, watercolor, and guitar. His latest books are *Marsbound*, *Starbound* and *Earthbound*. He's hard at work on a stand-alone novel, *Work Done for Hire*.

Kitty Steals the Show

Carrie Vaughn

(An excerpt of the novel to be published by Tor Books,
August 2012.)

Chapter 1

The prey doesn't know it's being hunted. She stays downwind of it and steps slowly, setting each paw quietly on the forest floor, keeping her head low, ears and eyes forward. Out of her sight, more of her wolves are circling, closing in while the buck grazes, ignorant.

They've tracked several young males for an hour. Careless, this one has drifted away from the others. Soon, he'll be cut off, helpless. Its fellows will run, using its misfortune as their chance to escape. They won't even look back.

The moment of attack happens quickly. Her mate leaps from shadows. He is sleek and tawny, full of muscle and life, his gold eyes shining in the light of the fat moon. The prey bolts, spinning on its haunches to escape. But three other wolves are there to block its

path. The rest of the deer run, disappearing into the woods. This one is trapped.

It spins again, toward her this time, and she snaps at its snout. Fearful eyes roll back in its head, showing white, and its nostrils turn red, heaving desperate breaths. The pack closes in, a dozen wolves surrounding the meat. Two of the males, warriors, strike at the deer's haunches and bite, digging in with claws and teeth. Another wolf, jaw open and slavering, aims for the throat. The buck puts down its head and slashes with velvety antlers. Possessing only a couple of prongs, it's inexperienced, but manages to clout its attacker. The wolf yelps and stumbles away.

She and her mate spring forward to take his place. She grabs hold of the prey's muzzle, closing off its nose, digging with her teeth until blood spills onto her tongue. Her mate bites into its throat and uses his weight to twist its neck and bring the meat down. Neither lets go until the convulsions, the last desperate twitching and the last hope to escape, fall still. Even then, her mate still hangs on, teeth bared, blood flowing around his snout.

The sounds of low growls and ripping flesh rise up. She bounces forward, snarling, landing on the deer's broad flank. The wolves who had been pulling at the

meat's hide flee, their ears flattened and tails clamped between their legs, then circle back to linger at the edges of the kill, watching. More wolves emerge from the trees and underbrush, older and weaker pack members who had not taken part in the hunt. They would have their chance; they'd feed, too, in their time. Her pack forms a circle around her, waiting for permission. One of them limps—the one the deer struck—and she flickers her ears at him, smelling. He licks his lips, bows his head. Bruised, he'll heal. She turns her attention to the task at hand.

Her mate is chewing at the deer's underbelly, the softest part of its gut, breaking through to offal and treasure.

They feed. They all feed.

I awoke to birdsong.

The sun hadn't yet risen, but the sky was pale, waiting for the first touch of gold. The air smelled fresh, wet, woody. Overhead, the branches of conifers reached. If I lay still I could see the critters flitting among them, cheeping and trilling, full of themselves. Way too manic. I stretched, straightening legs and arms, pulling at too-tight muscles, reminding myself of the shape of my human body after a full-moon night of running as a wolf.

My furless skin tingled against the morning air.

The birds weren't the only ones having fun this morning. My movement woke Ben, who stretched beside me and groaned. Then his arms circled me, his skin warm, flush in contrast to the chill. One hand traveled down my hip, the other reached to tangle in my hair, and he pinned me to the ground, pressing against me with his lean body as my arms pulled him closer and I wrapped my legs around his.

Instead of sleeping with the pack, Ben and I had gone off by ourselves, as we did sometimes, to make love, naked in the wild, and keep the world to ourselves for a little while.

Eventually, the cool morning burned away and the air grew warm. Ben lay pillowed on my chest, arms wrapped around me. I'd been tracing his ear and winding my fingers in his hair. Finally, as much as I hated to do it, I patted his shoulder.

“I think it's time to get moving.”

“Hmm, do we have to?” His eyes were still closed, his voice muffled.

“Theoretically, no,” I said. “But I think I'd like to go home and take a shower.”

“Maybe next time we can bring the shower out here,” he mumbled.

I furrowed my brow. “Like a camp shower? I think that’d be more trouble than it’s worth.” When I said shower I meant lots of hot water and a pressure nozzle, not just anything that happened to drip water.

He propped himself upright on one arm, keeping the other on my belly, idly tracing my rib cage, his fingertips leaving a flush behind them. “I’m thinking bigger. We could move out of Denver, get a house out here. Go out on the full moon and end up on our doorstep. I think I’m getting a little tired of that condo.”

Stalked by an unbidden memory, I froze. A house in the foothills, where the pack could gather—the idea brought back old, reflexive trauma.

“That’s what Carl and Meg did,” I said. When I took over the pack I promised I would never be like them.

Ben tilted his head to look at me. “We’re not them.” He said it with such simple, declarative finality.

If I separated myself from the memories, could I imagine walking out of my own front porch to a view like this every day? Yeah, maybe. “You sure you want to take the step away from civilization?”

“Ask yourself this: If you weren’t a werewolf, what would you want? Where would you want to live?”

I couldn’t trust my answer, because Wolf was always on the edges, nudging, pointing to certain preferences

over others. I'd never eaten rare steak before becoming a werewolf; now, it was my dinner of choice.

"I used to want a nice house somewhere," I said. "Probably in the suburbs. Big yard. Good shopping. But now? A house out of the city sounds awfully nice."

"Yeah," he said. "I grew up in the middle of nowhere, that's half the reason I moved to Denver in the first place. But I don't think I want to live in the city forever."

"So you can see us living in a house out of town? Even without our wolves talking?"

"Yeah, I can," he said. His smile was thin and wistful. I brushed his hair back from his face, an excuse to touch that expression, that little bit of his soul. He caught my hand and kissed the inside of my wrist.

"Hey, you guys fall into a ditch or something?" Shaun's voice carried from the next cluster of trees.

"If I say yes will he go away?" Ben said.

We could only avoid the inevitable for so long. I held Ben's face and kissed him, lips firmly planted against lips that melted against mine.

"Time to go?" he asked when we finally parted. I nodded.

Hand in hand we made our way to the den where the rest of the pack bedded down. Human shapes stretched in strangely canine manners, backs arced and limbs straight,

or scratched heads of tangled hair. Some were far enough along to be pulling on shirts and jeans that had been stashed under trees and shrubs the night before. Already dressed and keeping watch toward the road, where our half dozen cars were parked, Shaun waved at me.

“Tom, you okay?” Ben asked. “You took a pretty good hit there.”

Tom was in his early thirties, with dark hair that reached his shoulders and a shadowed expression. He seemed to be moving a little slower than the others, sitting up and catching his breath.

“Yeah, I’ll be feeling that for a little while.” Wincing, he rolled his shoulder, where a bruise, splotching purple and gray, colored the skin. It was mostly healed. If he’d been a wild wolf, that hit might have killed him, or at least broken bone, which would have been the same thing in the wild.

“That’ll teach you to look before leaping,” Shaun said, laughing. Some of the others joined in, chuckling and teasing him. Tom blushed and gritted his teeth.

“Hey, it could have happened to anyone,” I said, and they quieted. Tom ducked his gaze when I glanced at him.

One big happy wolf family, that was us. And I was Mom. It still weirded me out sometimes.

The sun was up and the spring chill starting to fade when we divided ourselves among the cars to head back to Denver and its suburbs. A couple members of the pack had to rush home to showers and clean clothes before going to jobs and pretending to be human for another day. I thought again about what Ben had said about a shower, a home base—maybe it would make things easier for everyone.

Shaun called out a question before climbing into his car, “Hey—when are you leaving for London again?”

“Two weeks,” I said. “They were kind enough to schedule the conference over the new moon ‘to make our lycanthrope guests more comfortable.’”

“Nice of them,” he said. “You know what you’re going to say in your speech yet?”

I was giving the keynote address for the First International Conference on Paranatural Studies. I figured if I didn’t think about it too much I wouldn’t get nervous. “That would be no,” I said, with more of a wince than a smile. Shaun just laughed.

Ben and I were the last to leave. We made sure everyone else was safe and happy, keeping it together, before we took one last look around our wild refuge, gave each other another kiss, got in the car, and headed out to the rest of our day.

There it was. Full moon over for another month. We traveled back to reality, such as it was.

A few days later found me deeply embroiled in the act of making my living.

I was trying to do meaty on the show tonight. Meaty was good. And not just rare steaks or fresh kill for the Wolf. Meat—real topical substance—gave me credibility. Sometimes, it even gave me answers.

“All right, we’re back from the break and station ID. This is Kitty Norville and *The Midnight Hour* coming to you from KNOB in Denver, Colorado. Unlike next week when I’ll be pre-recording a show for you in London, England, where I’ll be attending the First International Conference on Paranatural Studies. This will be the first time that scientists, academics, policy makers and pundits like me from all over the world will gather to discuss the topics that are so near and dear to my heart: vampires, werewolves, magic, what science has to say about it, what’s their place in the world. As you know, I’m a werewolf and have a vested interest in some of those answers. I’m hoping to line up some really slam-bang interviews, because when else am I going to have this many victims all in one place? In case you haven’t figured it out, I’m very excited about the trip.

“Now I want to hear from you—once I get these scientists and diplomats where I want them, what questions should I ask? What would you want to learn at the conference? The lines are open.” I checked the monitor and hit a line at random. “Hello, you’re on the air.”

“I want to know if it’s true that vampires are going to lobby for a seat at the United Nations.” The caller was male and enthusiastic, a fast talker.

“Where did you hear that?” I asked.

“On the Internet,” he said, with a tone of *duh*.

“I’ll certainly keep my highly sensitive ears open for rumors on that topic, but I don’t think it’s a real possibility, because I don’t think vampires have any interest in deferring to human authority on anything. They’ve got their own systems of organization and haven’t felt much of a need to take part in ours over the centuries. At least that’s my impression. Next call, please. Hello, talk to me.”

“Hi, Kitty, thanks for taking my call!” The woman sounded bubbly and nice. Maybe she wouldn’t be crazy. “I was wondering, do you think you could give us a sneak preview of your keynote address for the conference?”

Well, no, because I hadn’t written it yet, but I wasn’t going to admit that. “I’m afraid I’m keeping that firmly

under wraps until I actually give the speech. More fun that way, don't you think?"

"Well, I can't wait to hear it!"

Neither could I . . . "Thank you. I'm going to take another call now." I punched another line, glancing at the screener info on the monitor. "Jane from Houston, what's your question?"

"Hi Kitty, big fan here, thanks for taking my call. I've been listening to you for years and you've been talking around these questions that whole time. For all the so-called scientists you've interviewed and research you've talked about, nobody seems to have any answers. I have to tell you, I'm shocked there's even anything like a conference happening. Does that mean there are finally going to be some answers? Have scientists finally been able to figure out where vampires and lycanthropes came from? Are they actually going to tell us it's a mutation or a disease?" She sounded genuinely frustrated.

I said, "Science isn't like an Internet search. You don't just stick a question in one end of a machine and have the answer pop out the other side. I don't see the conference as a sign that scientists have finally found answers so much as it's proof that there's now a critical mass of researchers even asking these questions, that they can benefit from this kind of gathering."

“Or maybe the conference is so they can get their stories straight about the cover-up.”

“Excuse me?” I said. I heard a new one every show, it seemed like.

“You don’t really think anybody actually wants answers, do you?” my caller said brusquely. Here was someone so wrapped up in her conspiracy-laden worldview that the truth was obvious to her. “These ‘researchers’ are only pretending to be researching anything. They can keep putting out half-baked theories forever. In the meantime, anything they discover they can keep to themselves and use against the rest of us.”

“Anything like what?” I said, truly curious.

“The secrets of mind control, of immortality. The rest is a smoke screen. That’s what they’re looking for, and they’re not going to tell the rest of us when they find it. They don’t even care about the real questions, like where we came from.”

We—she was some brand of lycanthrope, I guessed. Vampires didn’t tend to get this intense about anything—they were used to sitting back and watching events take their course. Whatever she was, she was feeling lost and helpless in a world gone out of control. I could understand her position.

“I know some of these scientists personally,” I said in

what I hoped was a soothing voice. “Most of them are more worried about their funding than about taking part in any kind of cover up. But I’ll tell you what—I’ll ask as many people as many questions as I can about the origins of vampires and lycanthropes. I’ll bring the answers back to the show. How does that sound?”

“You say that now, but they’ll rope you in,” she said, as if I’d already personally betrayed her. “They’ll get to you, threaten you or bribe you, and then you’ll be in on it, too. Just watch.”

“So little faith,” I said, put out. If she could act like she’d been betrayed, I could act offended. “You said it yourself, I’ve been doing this for years, and no one’s stopped me yet. I don’t see this conference changing that, no matter how weird things get. Moving on.”

I clicked off Jane’s call and punched up the next. The caller didn’t waste time with so much as a hello.

“There’s no mystery where you all come from,” said a flat male voice. “It’s not even a question.”

“Oh? And where do we come from?”

“The devil! You’re all from the devil!”

I fielded one of these calls about every fourth show. The fanatics had learned to say what they needed to say to scam the screening process, and when they finally got on the air they’d give The Speech—the supernatural was the

spawn of Satan and the world was racing toward Armageddon on our backs. Blah blah blah. Sometimes, we'd let the calls through on purpose, because the best way to counter these jokers was to let them keep talking.

“You can dress it up in all that science double-talk, but science is the devil's tool! This conference is another sign of the End Times, the new world order. There's a reason it's called the number of the beast. That's the best thing about this, once you're there you'll all be stamped with the number, so the rest of us can see you, and you won't be able to hide anymore.”

I leaned into the microphone and used my sultry voice. “I wasn't aware I'd been hiding.”

“There's a war coming, a real war! You may sound all nice and sweet, you may have brainwashed thousands of people, but it's a disguise, a deception, and when the trumpet sounds, Lucifer will call his own to him, even you.”

“I like to think I'll be judged by my deeds rather than what some crazy person says about me.”

“All your good deeds are a trick to hide your true nature. I've listened to you, I know!”

“So what does that make you? A media consumer of the beast?”

The caller hung up before I did, which was a pretty

good trick. The game of “who gets the last word” meant that no matter how badly I mocked them, no matter how agitated they got, they kept on the line, thinking I’d somehow, eventually, admit that they were right. They always seemed to think that they were different than the last guy I hung up on. Suckers.

“I’ve said it before and I’ll say it again: If I’m the spawn of Satan, someone sure forgot to tell me about it. And I believe we have time for one more call. Hello, you’re on.”

“Uh, hi, Kitty. Thanks.” He was male, laid back. He sounded kind of stoned, actually.

“You have a question or comment?”

“Yeah. So, this thing’s in London, right? You’re going to London?”

“I think that’s what I’ve said about a dozen times over the last hour in a shameless bid for self-promotion.”

“Right.” He sniggered, like he was suppressing giggles. “So, that’ll make you”—more sniggering—“An American werewolf in—”

I cut him off. “I’m sorry, I seem to have lost that call. And I’d better not hear any Warren Zevon references, either. Sheesh, people. Let’s break for station ID.”

I had a feeling I was going to be hearing a lot of cracks like that over the next few weeks, I didn’t need to

start now.

The biggest issue about me attending the conference wasn't time, expense, or inclination. It certainly wasn't whether or not the conference wanted me there—they'd invited me, after all. The problem was whether or not Ben and I, as werewolves prone to a bit of claustrophobia, could reasonably survive the flight to London, sealed in a metal tube with a few hundred people our lupine selves classified as prey, and no escape route. My longest flight since becoming a werewolf had been to Montana, an hour or so away. Ben hadn't been on an airplane at all since becoming a werewolf.

I called a friend for advice.

The last time I'd talked with Joseph Tyler, formerly of the U.S. Army, he'd become part of the Seattle werewolf pack and was rooming with a couple of the other bachelor werewolves. I liked the idea of him having people to look after him—he suffered from post-traumatic stress related to his service in Afghanistan in addition to being a relatively new werewolf.

So I was a little surprised when a woman answered his phone. "Hello?"

"Um, hi. May I speak to Joseph Tyler?"

"Yeah, just a minute," she said, and a rustling

signaled her handing the phone over.

“Yeah?” came Tyler’s familiar, curt voice.

“Hey, it’s Kitty.” His enthusiastic greeting followed. “So who’s the girl?” I asked.

I could almost see him blushing over the phone line. “Um, yeah . . . that’s Susan. She’s . . . I guess she’s my girlfriend.” He said it wonderingly, like he was amazed by the situation.

“Is she a werewolf?”

“Yeah—I met her just a little while after I moved here. And, well, we hit it off. She . . . she’s been really good for me.”

I grinned like a mad thing. “That’s so cool. I’m really happy for you—and her.”

“Thanks.”

“Not to distract from the much more interesting topic of your relationship status, but I have a question for you. Really long trans-Atlantic flights—how do you do it without going crazy?”

He chuckled. “I’m about to find out—I’m headed to London for the Paranatural Conference, too. Dr. Shumacher asked me to be there for her presentation on werewolves in the military.”

The conference was sounding better and better. “Oh, that’s great! But wait a minute, you flew to Afghanistan

—”

“On military transports, with no civilians around.”

“I don’t think I can get a military transport to London,” I said, frowning. “I don’t suppose it’s realistic for us to see about chartering a private jet, just for werewolves?”

“Shumacher’s springing for first-class tickets,” he said. “That and a sleeping pill to take the edge off should do it.”

First class tickets—what an elegant solution. More space and free cocktails. I wondered who I could convince to spring for first-class tickets of my very own. “You’re sure it’ll work? It’d suck getting a couple of hours into the flight and finding out the sleeping pills don’t work.”

“I don’t expect them to work—it takes a lot of drugs to knock one of us out. But it should help. It’s like you’re always saying—you just work on keeping it together. I really want to go to London. This’ll work.”

If Tyler could do it, we had to try. I thanked him for the advice and congratulated him again on Susan. I wanted pictures. I wanted to fawn over them. It was adorable.

Then I called my producer, Ozzie, to ask how we could foot the bill for a first-class upgrade.

[End Excerpt]

From the book *Kitty Steals the Show* by Carrie Vaughn.

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Carrie Vaughn is the bestselling author of the Kitty Norville series. The eighth volume, *Kitty Goes to War*, is due out in July. She has also written a young adult novel, *Voices of Dragons*, and a stand-alone fantasy novel, *Discord's Apple*. Her short fiction has appeared many times in *Realms of Fantasy* magazine, and in a number of anthologies, such as *Fast Ships*, *Black Sails*, and *Warriors*. She lives in Colorado with a fluffy attack dog. Learn more at carrievaughn.com.

Interview: Kim Stanley Robinson

The Geek's Guide to the Galaxy

Kim Stanley Robinson is the bestselling author of sixteen novels, including three series: the Mars trilogy, the Three Californias trilogy, and the Science in the Capitol trilogy. He is also the author of about seventy short stories, many of which have been collected in the retrospective volume *The Best of Kim Stanley Robinson*. He is the winner of two Hugos, two Nebulas, six Locus Awards, the World Fantasy Award, the British Science Fiction Award, and the John W. Campbell Memorial Award. His latest novels are *Galileo's Dream* and *2312*.

This interview first appeared on Wired.com's *The Geek's Guide to the Galaxy* podcast, which is hosted by John Joseph Adams and David Barr Kirtley. Visit geeksguideshow.com to listen to the entire interview and the rest of the show, in which the hosts discuss various geeky topics.

Your new novel is called *2312*. What's it about?

Well, we're in the year 2012, and I decided I wanted to

go out a long way—at least for me. The two things I postulated that I think make it workable as a realistic kind of fantasia are space elevators on Earth and self-replicating machinery, and these are two supposedly possible engineering feats that are discussed in the literature, so they're not physically impossible. They might be hard engineering feats, but it seems like they could be done, and there are even companies working on at least the space elevator. Self-replicating factories are somewhat of a stretch at this point, but not obviously impossible.

So with those two technologies in hand, people get off-planet—substantially—and begin to colonize the asteroid belt, Mars, Venus, really almost everything that has a land surface or can be given an interior surface—because the asteroids are hollowed out and then spun up, so that they serve like the old O'Neill colonies from the '70s, where you live inside something that protects you from cosmic rays, and also you've got an artificial G in there from the spin.

And it might be healthier inside those things than out on the planetary surfaces and the big moons that we have. But I postulate a really robust inhabitation of the solar system, while also making the point somewhere along the way that the stars are too far away. If you don't give

yourself faster-than-light travel, which I don't think we'll ever have, then you have to point out that this solar system is basically our effective human neighborhood and play space. So it's a solar system-wide novel, and I wanted to be comprehensive, and go from inside Mercury to the vulcanoid asteroids that might be out there, out to Pluto and Charon.

And who's the protagonist?

Well, there are two, in my mind, because the novel really began when I had the idea that I wanted to tell the story of a romance between a "mercurial" character and a "saturnine" character, using the astrological notions of character coming from what part of the zodiac you were born under. And if you know anything about that system, you know that the mercurial character is very mercurial and the saturnine character . . . well, we've lost the sense of that word a little bit, but it's still very dour and phlegmatic and cool, being so far away from the sun and all.

So once I wanted that story, that's why I had to do a civilization that would inhabit Mercury and Saturn, to make the joke work, because the mercurial character is

from Mercury, naturally, and the Saturnine one's from Saturn. So those two characters are kind of . . . diplomats. In any case, they're in a class of people that zip around the solar system doing things a lot, and they get involved in a mystery of who's endangering some of these space settlements.

I've heard people say that the Sahara Desert and the bottom of the ocean are both much more hospitable environments than other planets in our solar system, and no one's living there, so why should we expect anyone to want to live on other planets? What do you think about that?

If we technologically solve the problem of getting out of our own gravity well and protecting ourselves from the elements out there, then it's not grotesquely different from living in Antarctica. You couldn't live in Antarctica without technological cover at all times; you'd quickly be dead without it. Now, not very many people live out there, and I have to say immediately that my space civilization, although spectacular and interesting, I think, is not numerous compared to the people who are still living on Earth. But in my book, Earth has been thrashed by climate change and has about a 35- or 40-foot higher sea

level, and that has caused enormous problems that are not truly dealt with 300 years from now. So things we're doing now have impacted that world there. And the space project is conceived of, then as now, as being a way to help us get along on Earth successfully and sustainably. And in the book I've postulated that it could even be used as a source of food and raw materials that we're running out of. That it would be a resource as such, even of animals that are going extinct, so a kind of inoculant, or a refusia—that space is being colonized in part to help Earth get over its stupendous overshoot.

In the book you have people living on Mercury in a city called Terminator. Where did that idea come from?

Well, it came from myself back in the 1970s. I lifted it from the first novel that I finished—although it was the third novel I published—*The Memory of Whiteness*. The idea being that once we discovered that Mercury rotates, we also realized that it rotates at a very slow speed, about a walking pace, so that I thought to myself that if a city were like a train, except enormously big and put on many tracks, that it could roll west in front of the sunrise and be driven, in fact, by the expansion in the tracks from the

sunrise, so there wouldn't be much energy involved; it's just being pushed by the sun off into the night, and stays in the terminator—the zone between light and dark—which on Mercury is irregularly wide, because Mercury has such a bumpy surface.

And it always struck me as a beautiful image. I've used it in a story, "Mercurial," and in the end of *Blue Mars*, and there are now terraforming textbooks that say, "Mercury is hopeless, but there's this notion that Kim Stanley Robinson's expressed in books before." You can only really plagiarize from yourself with a good conscience, and so I've never hesitated to lift from earlier work of mine if I liked it, and it seemed like it was suitable, and this seemed like the perfect way to start off a solar system-wide novel.

Mercury has—unlike the asteroids or any of the outer planets—a gigantic load of rare earths and rare minerals and rare metals. There's also something romantic about it, to be that close to the sun on the innermost planet, and also have all of the craters named after artists, writers, composers, painters. The International Astronomical Union, when they decided to name Mercury—after the first flybys in the late '60s/early '70s, I believe—it was a great idea because you look at the maps of Mercury and think, "Wow, I'd like to be between Homer and Sibelius,

or on the north side of Mahler, or watch where Van Gogh crashes into the rim of Cervantes.” It goes on and on like that, to the point where you can get a little artistic high just looking at the maps.

In 2312, many of the colonists on Mercury spend all their time walking beside the city as it moves. Now, you’re a hiker yourself. Is that sort of lifestyle something that appeals to you?

Yes, it sure does [laughs]. You’ve got me there. I love to spend as much time as I can walking in the Sierra Nevada in California. Through the course of my life, I’ve gotten very homed in on my home range, so that I don’t long for the other mountain ranges of the world like I used to when I was young. I just want to go up there. I see a lot of people who are like that, and there are people who are actually much more intense about it than I am, because for me it’s a casual hobby of only a couple weeks a year, but for some people it’s a way of life.

And I thought it’s an innate human impulse, and if you could walk and stay permanently in the sunset, a circumambulation around Mercury would be a cool thing to do. And you know, we have so many extreme athletics right now on this Earth. There’s the wonderful Roz

Savage who rows across oceans by herself, and there's all kinds of endurance athletics going on. As people get a sufficiency and feel secure and comfortable in their lives, they like to do things with their bodies, and I'm very sympathetic to that crowd, which is kind of opposed to the virtual reality/singularity crowd that we see more of in science fiction.

Speaking of that, I've heard you say that you're skeptical of the idea that a technological singularity might occur anytime soon. Why is that?

I think it's a misunderstanding of the brain and of computers, in effect. We are underestimating how complex the brain is and how little we understand it, and we're overestimating how much computers might have a will or intention. I think the intention will always stay with us, and the machines will be search engines and adding machines—enormously powerful and fast binary, digital things—but they're not going to do the singularity as I understand it, this notion that machines will take off on their own and leave us behind.

I think it's some of this what I call MIT-style public relations “futuresology,” which is just lame science fiction, where people are asserting that it's really going to come

true. And as a science fiction writer, I find that a little bit offensive, because nobody knows what's really going to come true, and people who declare it is are instantly putting themselves in the fraud category. They're claiming more than they can.

Now, to come back to the singularity, I think what's useful in it is the idea of it as a metaphor; it's a science fiction metaphor, and even if it will never come true in a literal sense, it might be a good way of talking about the way things feel already. So that I've been saying, "Yeah, the singularity, if it ever is going to happen, it actually happened back in 2008, with the financial crash."

Because what happened there, nobody quite understands, and it was a really super-complex system that involves computers, algorithms, laws, habits, and traditions, and all of them combined on a global financial system that no one person understood or controlled. So that's almost like the singularity. Our financial system has actually blown up in our face, and none of us understand it, and yet it does control the world.

Speaking of the financial crisis, in our last episode we interviewed Paul Krugman, and one of the things I wanted to ask him about was this idea from *Star Trek*

that there's no capitalism in the future. And actually in 2312, you have no capitalism in outer space. Could you talk about why you think that might happen, and what you think might be the alternative?

When I went to Antarctica, what I was noticing was that when you're in Antarctica, it looks like you're in a non-capitalist system, because all the scientists and workers down there are, for the time they're there, in a non-money economy, where you just are given your clothes, you go into the galley, you eat the food that's made for you. It's all non-monetary, except when you go into the post office and you buy some trinkets, perhaps, to send back home. So it was only unnecessary stuff like toys that were in a money economy, and the rest of it was just being provided for you.

And I thought the first space stations possibly will resemble the South Pole, and that's always struck me very strongly. I feel like, "Gosh, I sort of visited a space station." Except I didn't have to mess with the space suits, exactly. I could still breathe the air—because I was at the South Pole rather than in space. So following up that thought, I thought, well, as they develop up there what will happen is—they're not truly outside of capitalism, because capitalism has bubbles within it, you

might say—and I thought maybe that’s how it will develop, the transition to the next economic system, especially if capitalism can’t properly price what we’re doing on Earth and wrecks the Earth, that it might transition in space first and then have to work its way back onto Earth in a tail-wagging-the-dog type manner.

So while many of my space colonies are simply “colonies,” in that very definite meaning of the word, of some Earthly nation state, some of them are semi-autonomous. And Mars, after it declares independence, begins to protect some of the outer satellite colonies from interference from anywhere else. So I ran a history that got into an economic system that was, in space, rather cooperative, and using really fast computers to try to even calculate things outside of a market.

This is a tricky area, because it’s very poorly theorized. The people who’ve studied it clearly seem to find that there are re-complicating issues that come up so fast that even the most powerful computers might not be able to handle it, but I have quantum computers in this book—very small but extremely powerful quantum computers—and at that point, all kinds of computations are speeded up amazingly. So 100 billion years to factor a thousand-figure number drops to like 20 minutes. And that kind of scale shift made me think that maybe we can

let computers run the economy, though it's very much a question rather than a statement.

You call this system “the Mondragon Accord.” Is that based on something real?

Yes, in the Basque part of Spain there's a town called Mondragon that runs as a system of nested co-ops—including the bank, which is simply a credit union owned by everybody. So it's a town of only 50- to 100,000 and they're all Basques—more or less—and they don't intend to leave the city, so there are reasons why capitalist economists want to say that it can't possibly work for all the rest of us, but I'm not so sure. And what I wanted to do is scale it up, and show a Mondragon-style system working amongst all the space colonies in one giant collective of cooperatives.

2312 also features a visit to a future New York where the sea levels have risen 30 feet and Manhattan is now a city of canals like Venice. How realistic of a scenario is that?

Well, good question, and it's not just me that can't

answer it, but also the ice scientists of the world. We've got a massive amount of ice perched on Greenland, way further south than it should be; it's really a remnant of the old ice cap of the ice age 11,000 years ago, one of the last remnants of the Columbia Plateau in British Columbia and Alberta. So there it sits, and it's melting fast as could be, but we don't know how fast. Because it doesn't have to melt outright. It just has to slide into the sea, where it melts in about 6 months, no matter how big it is. So the question is: How slippery is it? And the same is true of the West Antarctic Ice Sheet, which rests on ground that is actually below sea level. So if it slips, if it gets lifted, etc., the West Antarctic Ice Sheet could come off a lot faster than just melting outright. For that reason, the glaciologists of the world just throw up their hands.

I mean, 300 years is long enough that we could indeed have a 40-foot sea-level rise, if we release the methane, if we don't get ahold of our carbon burn, if the methane comes off the floors of the ocean, out of the permafrost, etc., then we could cook this planet. And the total ice loss, if you were to lose all of it, you have a sea level rise of 270 feet.

What would that mean? What's at 270 feet above sea

level?

Well, you wouldn't have Florida, but Florida is even lower than that. At least a third of the world's population lives in that zone. I mean, there are homes in Beverly Hills that are 500 feet above sea level, so it's not a question of how close you are to the ocean. The Central Valley of California, where I live—although I'm 100 miles inland, I'm only 35 feet above sea level, and the whole Central Valley of California is low enough to become an inland sea again, as it has been in the past. So it just depends on what kind of coastline you have. A “drowned coastline” is what they call the eastern half of the United States, because it was two or three hundred feet lower during the Ice Age—11,000 years ago—and it's been rising ever since. Well, it'll probably drown again. I mean, the National Mall of Washington D.C. is only 10 feet above sea level.

One observation in this book that never really occurred to me before was that if sea levels rise significantly, there would be no more beaches anywhere on Earth.

Yeah, that is a sad thought for a beach boy like myself.

That occurred to me back in *Green Mars*, when I had the West Antarctic Ice Sheet come off to enable my Martians to have their revolution. So, you know, in a million or 2 million more years you'll have beaches again. But that's a cold comfort [laughs].

You wrote a series of novels called *Science in the Capital*, about the future of humanity's efforts to address climate change. To what extent was your goal with those books to actually change people's minds, and do you have any idea about whether or not you succeeded?

I did write those books to try to point out a danger and what we could do about it now, and so I wanted them to be a kind of alert, the way science fiction so often wants to do. But there is such a thing called "topic saturation," where people don't want to hear about it anymore, because it's been so much in the news since about 2004, so a novel about it is maybe the last thing you want to read . . . including me; I don't want to read much more about climate change after the last 10 years. But I also think that when people did dive in and give the books a chance, that they had a good time, that they had an entertaining, thought-provoking experience.

And I see now after some years have passed that they did get read, and they have been remembered, and people discuss them. I'm going down to UC San Diego to talk to a class about the first volume tomorrow, and it's often brought up by scientists who are working in these various fields, or at least scientists who want to read science fiction that still says something to the way their careers actually work and feel.

I think it's important to add that we shouldn't freak out about this, that there's a certain apocalyptic element in this, like, "Oh my God, we're going to cook the planet, and we're all going to die, and this is the worst crisis of all time." In fact, it's kind of slow motion. It's something that is amenable to laws and changing technologies and economics. It isn't going to require us to all become nuns and saints. It may be that it's sort of like shifting from cassette tapes to CDs to digital music, that we will technologically move into just better, cheaper, cleaner energy sources, and we will look back on climate change as a scary possibility that we dodged most of.

2312 includes references to a historical event called "the Accelerando." Is that a reference to the Charles Stross novel?

No, the Charles Stross novel is a reference to *Blue Mars* [laughs]. At least, I've been told that. I haven't had that confirmed by Charlie himself, but I did get there first. So whether he knew about me or not, I don't have to worry about it, because at the end of *Blue Mars* they go through the Accelerando, and there's a section of *Blue Mars* where it kind of shoots off—the novel gets off far enough into the future that things go off into the solar system in a way that somewhat resembles *2312*, so that you could even think of *2312* as being about 100 years after the end of *Blue Mars*, and although Mars doesn't have the same history, nor Earth, they're parallel enough that you could think of it as kind of a spiritual successor.

So once again, I lifted from myself, and I was really pleased when Stross titled his novel that, because for people who know enough about science fiction—or who've read the Mars trilogy—they'll see that I had the idea. Or I got the name. I think the idea is kind of the common science fiction idea that we might begin to accelerate in our changes. That's a sort of Frederik Pohl idea, almost—"Day Million."

I think I heard you say once that you'd had one totally original science fiction idea, and that was in your

novel *Icehenge*, where you presented this idea that immortals would have to selectively erase their memories in order to keep the number of memories manageable. Is that right?

Well, that isn't exactly how that works in *Icehenge*. Painfully, what I really was thinking was if we had longevity, that our memories might not be able to keep up with it, and the older I get the more I think that might be right. In *Icehenge* they were living five and six hundred years—I was bold as a young man—and yet they were only remembering a few childhood memories that were really stuck and then the last 50 years, and so they were cruising through life with big gaps in what they'd done two, three hundred years before.

And that was an idea of my own that I hadn't seen expressed before. I think by now I might've had a few more original science fiction ideas. The alternative history idea for *The Years of Rice and Salt* I think is a good one, and my own. But I am mostly someone who looks at the tradition and loves it, and tries to do my own alterations on it, and express it in my own way. I don't feel like a visionary.

I think that's interesting. I was really struck in *The Encyclopedia of Science Fiction*, the entry for Gene Wolfe describes him as possibly the greatest living science fiction writer, but says that he's arguably never come up with an original science fiction idea.

Yeah. Well, and also you think of Shakespeare tinkering around with a bunch of old plays. I mean, he's not an original thinker in any way, shape, or form. And Gene Wolfe is a good comparison to Shakespeare—much better than me—in that he loves science fiction and takes all the dumb old ideas, and, under the inspiration of Marcel Proust, has kind of Proustified all the pulp ideas that are out of our genre, most gloriously.

Speaking of Gene Wolfe, I noticed references in *2312* to his *Return to the Whorl* and Samuel R. Delany's *Dhalgren*. Why did you decide to put those references in there?

Well, they're two of my favorite writers, and two of my teachers when I was at Clarion in 1975, and two of the people I've read all through their whole careers, and two human beings I revere and feel are exemplary figures.

In *2312*, I played a couple of little games where I was

sneaking in science fiction novel titles as ordinary phrases all over the place, and then also there were references back to classic science fiction literature. Since people are out in the solar system, I thought maybe they'd think back on the clunky old stories of their ancestors about these situations and refer back to them somewhat. So I felt free to make those kinds of references, and I did it a lot, and it was fun.

What are some of the other passing references in *2312* that might be worth mentioning?

Well, I keep running across little titles, like Ken MacLeod's *Learning the World*, which is such a beautiful title, and I had a phrase "a Banksian sublimity" for a huge interior space that was like one of his Culture novels. But when he agreed to give a blurb for the novel in England, he pointed out that it would look like logrolling for me to be mentioning him inside the novel and requested that I pull the reference, which I did. But, actually, there is no good replacement for the adjective "Banksian," because for those of us who read Banks, it's a very particular quality that no one other adjective can replace.

You mentioned that in *2312* there are these characters who are quantum computers, and a couple of times the issue of “decoherence” comes up as a problem for them. Could you explain what is decoherence and why is that an issue for the quantum computers?

Yeah. Well, I can explain it at my English-major level [laughs]. I'd love to have one of the experts actually talk about this. But they try to get a molecule or some other qubit of some undetermined substance—at this point it's undetermined what would make the best qubits—into a superposed state, so that in quantum terms it is all values at once, and occupying even multiple universes—to the extent you can comprehend what that means—and then when it decoheres it breaks down into . . . like when Schrödinger's cat is determined to be either dead or alive, it breaks down to a normal moment of either/or, and you don't have those superposed states.

In a quantum computer, you want those superposed states, because you can use these superpositions for calculating, and if it drops down into the either/or state before you're done with your calculation, then you've simply lost it. So in my book, what I postulate is that we haven't gotten very far with that problem, because it strikes me as a really severe problem, and that quantum

computers might be one of these things that is always 30 years away, or always 50 years away, and we never really get closer, because of the problems involved with the technology. I'm not sure about that, because so many things do get done, and the quantum computer people are pretty cheerful about the prospects. But in my book they've only gotten to like 30-qubit quantum computers. And even those are amazingly powerful, but you can't make them any bigger or more powerful or they'll start decohering frequently, and you don't get anything out of them.

The first book of yours that I ever read was called *Escape From Kathmandu*, which I remember being fairly lighthearted, about hikers who befriend Bigfoot. That seems like a departure to me from a lot of your other books, which are very sweeping and ambitious, and I'm just wondering if there's a funny story about how you came to write this humorous book.

I don't know how funny the story is, but my wife and I did go to Nepal in 1985, and while we were there we were laughing our heads off every day. Strange things kept happening to us, including running into Jimmy and Rosalynn Carter, because they too were on their way to

see Mt. Everest, with all their secret service agents, and immediately—like within an hour—I said to my wife, “Boy, I should use that in a story.” Because that was strange. Because there was Jimmy Carter’s face right next to us in Namche Bazaar, which was like the last place on Earth you would expect to see such a familiar face from all the magazines and TVs, having never seen him in person. That was just bizarre to see his truly human, friendly face there in this bizarre context.

So once I started writing those stories, I began to realize we had had a very beautiful two months there. Our treks were filled with friendliness, and sort of a pilgrimage feeling, like *The Canterbury Tales* or any pilgrimage. That is a special walk, where you walk with other people and you aren’t necessarily companioned with them every single day or hour, but you keep crossing paths with them, and everybody has this spirit that something great is going on here, something bigger than us. So a pilgrimage is a beautiful thing, and a lot of people do it around the world—maybe not a whole lot of Americans, or maybe it’s just such a minority thing that not many people have realized what a special state it is. So I wanted to write about that feeling, and the main feeling was just that we had loved it, and we had a lot of laughs.

You've said that your story "Prometheus Unbound, At Last" contains your prediction for the 21st century that you think is most likely to come true. What is that prediction?

Nature magazine asked me to do one of their last page of *Nature* short stories, which they were doing for a year or two, and I was very pleased to be published in *Nature*. But 800 words? My lord, what a limit for me as a novelist who had sort of lost the habit of short stories. So I decided to do it as a reader's report on a novel so I could summarize an entire scenario and make a lot of jokes. It seemed to me the only way to do it, because I don't know what an 800-word short story is.

So, having done that, I just predicted that the scientific community was going to insert itself more and more into human policy decisions, and that they would do that because it was the best protection for their own descendants, and it was a kind of a socio-biology point—that just out of concern for our own kids, that we will end up making a kind of scientific/technological utopia despite the dangers. Since it's almost the only full prediction I've made, it sort of stands as the most likely one, by default [laughs].

Are there any other new or upcoming projects that you'd like to mention?

No, I think you've got it. You mentioned *The Best of Kim Stanley Robinson* indirectly by talking about the "Prometheus Unbound" comments. The last short story in that collection, which I wrote for it about Wilhelm Furtwängler and the Berlin Philharmonic in 1942, that's my most recent short story, and I'm pleased with Jonathan Strahan for pushing me hard to write a new short story for the collection. So that was a cool thing, but that's the last thing that's happened.

The Geek's Guide to the Galaxy is a science fiction/fantasy talk show podcast. It is hosted by:

John Joseph Adams, in addition to serving as publisher and editor of *Lightspeed*, is the bestselling editor of many anthologies, such as *Armored*, *Under the Moons of Mars: New Adventures on Barsoom*, *Brave New Worlds*, *Wastelands*, *The Living Dead*, *The Living Dead 2*, *By Blood We Live*, *Federations*, *The Improbable Adventures of Sherlock Holmes*, and *The Way of the Wizard*. He is a four-time finalist for the Hugo Award and a three-time finalist for the World Fantasy Award. Forthcoming anthologies include: *Other Worlds Than These* (July, Night Shade), *Epic* (November, Tachyon), and *The Mad Scientist's Guide to World Domination* (2013, Tor). Find him on Twitter @johnjosephadams.

David Barr Kirtley has published fiction in magazines such as *Realms of Fantasy*, *Weird Tales*, *Lightspeed*, *Intergalactic Medicine Show*, *On Spec*,

and *Cicada*, and in anthologies such as *New Voices in Science Fiction*, *Fantasy: The Best of the Year*, and *The Dragon Done It*. Recently he's contributed stories to several of John Joseph Adams's anthologies, including *The Living Dead*, *The Living Dead 2*, and *The Way of the Wizard*. He's attended numerous writing workshops, including Clarion, Odyssey, Viable Paradise, James Gunn's Center for the Study of Science Fiction, and Orson Scott Card's Writers Bootcamp, and he holds an MFA in screenwriting and fiction from the University of Southern California. He also teaches regularly at Alpha, a Pittsburgh-area science fiction workshop for young writers. He lives in New York.

Interview: Seanan McGuire/Mira Grant

The Geek's Guide to the Galaxy

Seanan McGuire (a/k/a **Mira Grant**) is the author of the October Daye series, the InCryptid series, and the Newsflesh trilogy (consisting of *Feed*, *Deadline*, and *Blackout*). Her short fiction has appeared in *Apex*, *Fantasy Magazine*, *Lightspeed*, and in many anthologies, such as *Home Improvement: Undead Edition*, *Other Worlds Than These*, and *The Living Dead 2*. She is a winner of the John W. Campbell Award for Best New Writer, and a five-time Hugo Award nominee, including four Hugo nominations this year.

This interview first appeared on Wired.com's *The Geek's Guide to the Galaxy* podcast, which is hosted by John Joseph Adams and David Barr Kirtley. Visit geeksguideshow.com to listen to the entire interview and the rest of the show, in which the hosts discuss various geeky topics.

You write fiction as both Seanan McGuire and as Mira Grant. Why do you use the two different names?

So do you remember how back in the early '90s Disney created Touchstone Pictures so that they could release R-rated movies? Basically there was a point where Disney wanted to diversify. They wanted to start doing more things without worrying that mothers were going to say, "Oh, honey, look. Disney's got a new film out, it's called *Reservoir Dogs*. Let's take the kids!" So they created Touchstone, which was a wholly owned subsidiary. It was completely open; everyone knew that Touchstone was Disney. It was the same executive producers, it was a lot of the same writers, the same directors, and yet having that different name on the cover of the movie changed the expectations people had going in.

There's never been any illusion that Mira wasn't me. When I was first writing *Feed*—which was the first book I published as Mira—I talked about it very openly on my blog, on Twitter, that I was writing this book, and it wasn't until after it was sold that I said "Mira Grant" wrote this book. And the reason there was really purely marketing based. It was so that my urban fantasy fans would see okay, this is a Mira Grant book. Clearly there is a difference. And it works in reverse too. People who would never have considered a zombie political thriller by an urban fantasy writer were willing to pick up *Feed* and take a look at it.

I frequently joke—though it is not as joking it might be—that I am actually a rogue Disney princess that decided I liked profanity and porn, and so ran away from the studio. And that is what you get out of a Seanan book. I do a lot of urban fantasy, which is modern-day cities, but you’ve got magic, you’ve got fairies running around, or crypto-zoological creatures running around, and I’m pulling very heavily on my background as a Folklore major and having done some animation work and all of that, and I’m pulling from the modern fairy tale narrative. With Mira Grant, I’m doing a lot of political and medical science fiction, and that’s more drawing on the fact that I’d really talk to you about tapeworms while we’re trying to eat raw fish.

You’re on the Hugo ballot four times this year. Could you tell us a bit about your Hugo-nominated works?

I’m on the Hugo ballot four times, and it’s the first time a girl has ever done that, ever! I’m on the ballot twice as myself and twice as Mira. As Mira, I’ve been nominated for *Deadline*, which is the second book in the Newsflesh trilogy. The first book, *Feed*, was on the ballot last year. And I’m also up as Mira for “Countdown,” which is a

novella set in that same universe. When I was getting ready for the release of *Deadline*, when it was coming out soon, I decided that the appropriate way to get people excited about the book would be to write a novella in 30 pieces, and publish a piece on my blog every day for a month . . . during a convention, a week and a half long trip to New York, and a doll traders expo. And I managed to do it without missing a single day.

And when it was all done my editor at Orbit was like, “Hey, that thing you did, you want to sell it to us?” So I said, “Sure,” and they bought it, and they put it in the Orbit short fiction program. It’s going to be coming out in physical form from Subterranean Press later this year. So I think that that actually counts as “monetizing my blog.” I’m very proud of that. As Seanan, I’m actually not up in any fiction categories. I am nominated for best fancast as part of the crew that does the *SF Squeecast*. The other nomination under my own name is actually, for me, the most exciting. I’m up for a filk CD, which is called *Wicked Girls*. It is the first time a solo filk CD has ever made the ballot in any category. Filk has been huge in science fiction fandom for more than 30 years, and this is the first time that we’ve been able to get it representation on the Hugo ballot.

Could you explain what filk is for people who don't know?

Filk is the folk music of the science fiction and fantasy community—you get parodies, you get traditional music that's had the words slightly modified, and you'll also get just original works that have been written about science fiction and fantasy works, or with science fiction and fantasy themes. Some of it is silly sing-alongs, some of it is really big, dramatic, heartbreaking stuff. I love the filk community. It's the single most welcoming part of fandom that I've ever encountered, and filk saved my life a lot of times when I was a teenager. It was always somewhere I could go, and I think that's the strength of the filk community, that no matter whether you sing, you play, you just want to listen, as long as you want to be there, they want you to be there.

Your latest Mira Grant book is called *Blackout*, which is the third book in the Newsflesh trilogy. Could you give us some background on that setting?

The basic concept behind the Newsflesh trilogy is that in 2014 the Zombie Apocalypse happened, and it took us about three years, but around 2017, 2018, we actually

managed to win. A lot of people died, a lot of land was permanently ceded, but we came out on top. So 20 years pass, and you have an entire generation of people that's grown up in a world where zombies just are. They're not something special. They're not something exciting. They just are. People go on. People do what they do.

The Newsflesh trilogy actually follows a pair of bloggers—primarily—Shaun and Georgia Mason. They're what's considered “orphans of the rising,” which means that their biological families all died when the zombies rose, and they were adopted together and became professional bloggers, because it's the blog community that, when the dead actually started walking, was willing to stand up and say, “The dead are walking. We have a problem here.” Rather than just going, “Oh, it's the flu. Oh, it's something. We don't know what it is, but we'll deal with it.”

Feed follows the political campaign of Senator Peter Ryman as he is running to be the Republican candidate for President of the United States, and Shaun and Georgia and their friend Buffy have been selected to be his campaign bloggers, to basically follow him through this process. *Deadline* picks up where that left off, and it's dealing with the aftermath of the political campaign, and *Blackout* is sort of bringing those two things together. So

Feed is a political thriller with zombies, *Deadline* is a medical thriller with zombies, and *Blackout* is a conspiracy thriller with zombies.

So the zombie virus in your books is described in great detail. How'd you go about inventing that?

In order to come up with the Kellis-Amberlee virus, I read enough books on viruses to qualify for some kind of horrible extra credit program, audited a bunch of courses at UC Berkeley and at the California Academy of Sciences, and then started phoning the CDC persistently and asking them horrible questions. Now, back to filk, I wrote a song several years ago called “The Black Death,” which is a schoolhouse rock type song about the epidemiological, anthropological origins of the Black Death, and why I do not believe that it can have been Bubonic Plague, because I subscribe to the hemorrhagic fever theory of the Black Death. It’s a really bizarre little song, but it’s managed to get me some fascinating connections in the epidemiological world.

The first time I called the CDC, I said that I wanted to talk to someone about possibly designing a zombie virus. “I’m a writer, blah-blah-blah.” And the lady who

answered the phone was like, “Uh . . .” I said, “My name’s Seanan McGuire. Can I leave a number? Can I do this?” And she went, “Wait. Are you ‘The Black Death’ girl?” “Yeah.” She says, “Sing for me!” So I sang “The Black Death” for the receptionist at the CDC, at which point she actually helped me find people to talk to. So every time I came up with a new iteration of Kellis-Amberlee, I would call back and say, “If I did this, this, this, this, this and this, could I raise the dead?” And every single time they would say, “No.” And I’d say, “OK,” hang up, and go back to working. After about the 17th time, I called and said, “If I did this, this, this, this, this, this and this, could I raise the dead?” And got, “Don’t . . . don’t do that.” At that point, I knew I had a viable virus.

The final iteration, Kellis-Amberlee, is actually a chimera virus resulting from the union of a genetically engineered strain of Marburg, which is a filovirus—it’s related to Ebola—meeting up with a genetically engineered coronavirus, which is one of the common cold viruses. The Marburg was designed to cure cancer, basically. It’s something that you’re supposed to get in your body and just keep there, and anytime that you develop cancerous cells, the Marburg will wake up, begin reproducing, and eat them. Then the coronavirus portion, which is the “Kellis” portion, was designed as a cure for

the common cold, and it's supposed to be a pernicious infection. Basically, it's a shifting-antigen base. It gets into your body and it never, ever leaves, because your immune system winds up treating the Kellis infection as a part of the immune system, and doesn't fight it off. The Kellis infection is self-replicating, and that shifting antigen means that it's continually finding new food sources. It's supposed to prevent other infections from getting into your body, because it's taking up all the available space. Well, when those two viruses met, they had babies, and what you got was a shifting-antigen flu that does not leave the body under any circumstances but is capable of turning into something that converts human tissue into more of the virus. And that's how we got Kellis-Amberlee, which makes zombies.

You've said that the modern lack of respect for basic health and quarantine procedures makes you want to scream.

No one respects quarantine anymore! Nobody comprehends quarantine, and absolutely nobody comprehends the fact that sometimes your "rights" and "liberties" do not have any place in this conversation. We have totally drug-resistant tuberculosis! And what do

people with totally drug-resistant tuberculosis do? Do they lock themselves in their houses for the rest of their lives? Do they eat a bullet? No! They get on airplanes. And then they get pissed off when the CDC yells at them. Quarantine exists so that we can continue as a species to exist. And yes, it sucks if I say to you, “Dude, really sorry, had to shoot your wife. Had the totally drug-resistant tuberculosis, yo.” But you know what sucks more? Killing an elementary school because you went outside with your totally drug-resistant tuberculosis.

The Crazies, a fantastic movie, was built entirely on the precept that you should break quarantine, like, that’s just what you should do. I think I may have been the only person in that theater that was rooting for the government. I liked our heroes. They were nice people. It’s not their fault. But at the end of the day, when you’re in the contamination zone, sometimes it doesn’t matter if it’s your fault.

So my dad just read *Feed*, and his reaction was that he could believe that a virus could reanimate the dead, but he had a harder time believing that anyone could make a living as a blogger. What do you think about that?

There are already people that are essentially making a living as bloggers, that are already beginning to make a living in the New Media. It's not a great living. I mean, none of the people that are presented in *Feed* are getting really wealthy off of what they do unless it's off of merchandising and counter hits. But keep in mind that in the *Feed* world, "blogger" now contains a lot of different subcategories. Buffy, who is one of the main characters in that first book, is essentially a romance writer who sells her work through their blog. Georgia is a political and factual reporter. She syndicates her articles, she sells advertising. She makes very little money, whereas her brother, who is an I-will-do-stupid-shit-if-you-would-just-give-me-more-page-hits-and-buy-more-T-shirts blogger, makes about everything the two of them bring home together. So we actually did work on the economy of my blogosphere fairly intensively. It probably does not hold up to the Internet as it is now, because when I was first writing *Feed* and setting up this world, Facebook was pretty small and there was no Twitter. But I think you could make it work if you had to.

As someone with a popular blog yourself, do you have any advice how to go about creating a popular blog in

the real world?

I see a lot of authors—like, a *lot* of authors—who’ve been told, “You need to create a blog, you need to have an Internet presence, you need to do this thing,” who just set out and they create a blog, and all it is is “Buy my book!” over and over again, all the time. And I’m not talking about the two weeks leading up to your book’s release. That is really the time at which “Buy my book, buy my book, buy my book” is kind of a reasonable statement. I’m talking about 100 percent of the time, and there is nothing of that person in that blog. Now, I don’t think that anyone is 100 percent honest all the time on the internet. There is an element of self-censorship, but there’s also an element of you have to be a *person*. You have to talk about who you are, and be who you are, or you risk becoming nothing more than a persona. And I think the internet is pretty clever, in terms of knowing when you are being a persona rather than being a person.

Do you have any general advice for dealing with hostile comments online?

In March of this past year, the physical edition of my book *Discount Armageddon* was released almost a month

early. People started receiving the book, and it was fine—well, it wasn't fine, I was very upset—but things happen, it's not your fault. Except that the ebook was not released at the same time, and someone somewhere told some message board that I was being a horrible greedy cunt and withholding the ebook to try to force people to buy the physical edition, and the amount of hate mail I received in a 24-hour period exceeded the previous 18 months. I was called a “greedy cunt.” I was called a “stupid whore.” Pretty much any variation of “cunt,” “whore,” or “bitch” that you can come up with was applied to me directly.

I had several offers to “rape the stupid out of me.” I had one particular master of the rape threat threaten to rape my best friend in front of me repeatedly, so that I would understand his position—somehow raping my best friend is equal to you not getting an ebook when you want it, when when you want it is prior to the release date. And I looked at the fact that I was crying so hard I was shaking, and I said, “You know what? That's why I have a personal assistant.” And I gave the password to that email box to my PA, and told her not to let me see anything. And that was the only way I could get through that process. And in case you're going, “Well I don't have a PA,” everyone for this purpose can have a PA

fairly easily. You go to your friend, you go to your brother, you go to someone you trust, you be prepared to change the password on that email box when you're done, and you say, "Hey, John, this is the situation, these are the emails I'm getting. Can you please monitor these emails for me for the next week?"

So your short story "Everglades" appeared in John's anthology *The Living Dead 2*. What was that story is about?

Something that frustrates me a lot in zombie fiction is that everyone is instantly a hero. You almost never see anybody who looks at this situation and looks at this world and says, "Peace out, yo. I'm done." And I really wanted to follow that character for a little while. I wanted to show what happens when someone realizes that the world has just undergone a sea change, and they're not ready to evolve with it. So "Everglades" was kind of my evolution piece. It was this character standing at the beginning of the zombie apocalypse, wondering if there's a cure, wondering if there's a salvation. What they know is that a lot of people are dead, and that even if the cure comes tomorrow, they'll be rebuilding for 15-20 years. That this has been a huge, huge disaster.

Apparently the Defense Department and the CDC both have actual zombie response plans. What do you think of their plans?

So you have to understand that the zombie defense plans in question, they're actually quite good plans, but if you really read them, they're quite good plans explaining how we could shoot several thousand unarmed civilians if necessary. And that is a lot of the motivation for having them. Creating a "zombie defense plan" is an acceptable way of saying, "Okay, if we need to clear 3,000 people out of the area in front of the White House, what's our plan of attack there, guys? How are we going to do it?"

But if you want some really good reading, pick up a copy of the *2011 Canadian Pandemic Preparedness Manual*. One of the best things that's ever happened to me on an airplane in my life is I was sitting on a plane next to this lady, and I was reading *Parasite Rex*, which is Carl Zimmer's beautiful, beautiful book on parasitism in humans and other creatures. And the lady next to me commented that she had read that book, she liked it. I asked her her name, what did she do, and it turned out she was one of the people who'd worked on the Canadian

Pandemic Preparedness Plan. So we spent the entire flight from California to Massachusetts happily talking about stacking dead bodies in hockey rinks, and how we would deal with certain outbreaks, and it wasn't until we started to land that we realized we had just spent an entire airplane ride gleefully discussing these things.

Speaking of parasites, you've said that you're one of the people who believe that a lack of hookworms explains peanut allergy. How does that work?

The “hygiene hypothesis” basically holds that the ongoing rise of allergies and autoimmune disorders is connected to the fact that we have reduced the contaminants in our environment at an unnaturally fast rate. So we spent millennia evolving immune systems to cope with parasitic infection, to cope with having things squirming around in and biting on us all the time, and then we took them away essentially overnight. So our immune systems are basically really, really bored five-year-old boys standing in rooms full of breakable things, and they have baseball bats.

There have been some really fascinating scientific studies done, several of which are fairly conclusive. My favorite is the Venezuelan study, where they were able to

take two essentially genetically identical populations—one living in the city environment, one living outside the city environment—and test them for incidents of allergies and autoimmune disorders, and they were actually able to chart a pretty much one-to-one correlation between “lives outside the city, has a parasitic infection, has no allergies” and “lives inside the city, has no parasitic infection, has lots of allergies.” So there is some very strong scientific support for the hygiene hypothesis, and for the idea that controlled reintroduction of parasites to the human body is a way to deal with all of these conditions.

There have also been some folks who—because humans will always be smart this way—have been experimenting on themselves, and have been going out and getting themselves some hookworms, to find out if it would work, and for the most part they are in fact finding that it will work, and it will control their allergies, right up until they inevitably let their hookworm population get out of control and have an exciting new problem to contend with, which is, you know, hookworms, they’re not your friends. That’s actually the topic of the new Mira Grant duology I’m writing, which is called *Forced Evolutions*; it’s about the hygiene hypothesis, and genetically engineered parasites, and lots of other fun things that have made me the world’s best dinner

conversationalist for the past year.

Are those coming out soon?

Yeah, actually at the beginning of our little pre-interview chat, I said I'd finished a book last night, and the book I finished was *Parasite*, the first of those two. They've been sold to Orbit, and I believe the plan is that *Parasite* will be out next year.

So you mentioned earlier that you and some of your writer friends have started up a podcast called *SF Squeecast*. How did that idea first come about, and what sorts of topics do you cover?

So, in Australia in 2010 they held the Worldcon, and because it was an Australian Worldcon, they were very generous with certain panel spaces, because it was a small convention in terms of Worldcons, so they had a lot of room to fill. And this led to Paul Cornell and me being given an entire slot just to talk about *Fringe*. Not to lead a discussion, not to involve other people in any meaningful way, just "Sean and Paul are going to have a conversation about *Fringe*, and ya'll can watch." So we

in fact had a conversation about *Fringe*, and a lot of people showed up to watch, and it was surprisingly a lot of fun.

And last year we were chatting on Twitter, talking about how much fun we'd had in Australia, and how great it was to sit down with someone who loved a thing that you loved. And so we're talking on Twitter about how much fun this was, and how we wish we could do it again, and we'll probably never convince another Worldcon to let us do that, but god that was great. And Lynn Thomas saw us having this conversation and went, "You know, we could do a podcast." The next thing we know, Lynn's giving us instructions on what microphones to buy, and Cat Valente and Elizabeth Bear—who are good friends of ours—have been roped into this, and we're meeting once a month to talk about things.

Basically what we cover is whatever we want to cover. So for each podcast, we will each come in with a topic, and that topic will be a thing that we want to be positive about this recording session, and then anyone else who has any experience with the topic will chime in and give their opinions on things.

Are there any recent or upcoming projects you'd like

to mention?

Blackout just came out. I've got my first book with Subterranean, which I'm very excited about; they're publishing a print edition of "Countdown." I have a new novella coming out on July 11th. It's called "San Diego 2014: The Last Stand of the California Browncoats." It's a Newsflesh universe novella, and was sort of my exercise in giving Orbit's legal department fits. Because when you come in and say, "I want to set something at a comic convention, so two-thirds of the characters will be running around dressed as representatives of other peoples' licensed properties. Is that okay?" they kind of make this little squeaking noise deep in their throats. And that was maybe mean of me, but it was so much fun. Then I have the sixth book—because I also write, not just Mira—in my ongoing urban fantasy series, the October Daye books, coming out this September. I have a Toby Daye book in September, and then an InCryptid book in March.

The Geek's Guide to the Galaxy is a science fiction/fantasy talk show podcast. It is hosted by:

John Joseph Adams, in addition to serving as publisher and editor of *Lightspeed*, is the bestselling editor of many anthologies, such as *Armored*,

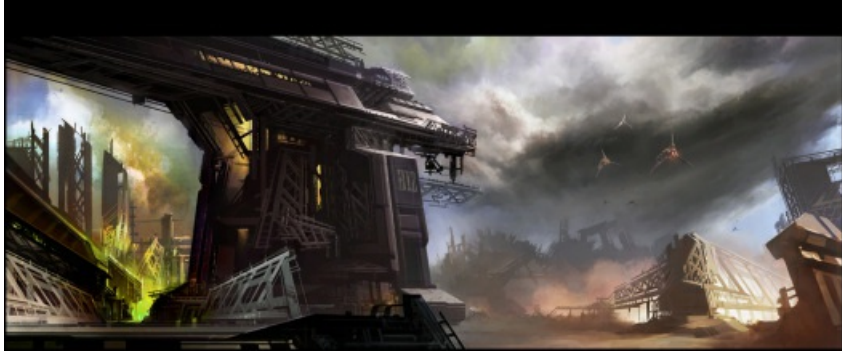
Under the Moons of Mars: New Adventures on Barsoom, Brave New Worlds, Wastelands, The Living Dead, The Living Dead 2, By Blood We Live, Federations, The Improbable Adventures of Sherlock Holmes, and The Way of the Wizard. He is a four-time finalist for the Hugo Award and a three-time finalist for the World Fantasy Award. Forthcoming anthologies include: *Other Worlds Than These* (July, Night Shade), *Epic* (November, Tachyon), and *The Mad Scientist's Guide to World Domination* (2013, Tor). Find him on Twitter @johnjosephadams.

David Barr Kirtley has published fiction in magazines such as *Realms of Fantasy, Weird Tales, Lightspeed, Intergalactic Medicine Show, On Spec,* and *Cicada*, and in anthologies such as *New Voices in Science Fiction, Fantasy: The Best of the Year,* and *The Dragon Done It.* Recently he's contributed stories to several of John Joseph Adams's anthologies, including *The Living Dead, The Living Dead 2,* and *The Way of the Wizard.* He's attended numerous writing workshops, including Clarion, Odyssey, Viable Paradise, James Gunn's Center for the Study of Science Fiction, and Orson Scott Card's Writers Bootcamp, and he holds an MFA in screenwriting and fiction from the University of Southern California. He also teaches regularly at Alpha, a Pittsburgh-area science fiction workshop for young writers. He lives in New York.

Artist Gallery

Hrvoje Bešlić











Artist Spotlight: Hrvoje Bešlić

J. T. Glover

Hrvoje Bešlić is a Croatian artist specializing in digital painting who graduated in 2007 from the Art Academy Zagreb. He learned how to draw on paper and only got his first PC a few years ago. Long hours since then spent with his Wacom tablet have brought him a long way, as you can see from the gallery. He has an affinity for fantasy, and scenes where a fight is just around the corner.

“p43” is full of atmosphere, with a strong sense of narrative. Can you tell us about your inspiration for the painting?

It was inspired by the movie *Underworld*, which I watched the night before on television. I just wanted to have fun with it, place it in fantasy setting. And any excuse to make armor and weapons is good enough for me.

Given how many of your paintings depict moments of

high tension, what compositional elements do you use to heighten the tension of that moment?

I'm not sure. I never think about it, I just try to make things look nice. Perhaps it's depicting the moments before the action that heighten the tension. The viewer is left to fill in what will happen after what is depicted in the picture.

Many of your paintings have a strong sense of place, or are purely landscapes. What draws you to landscape painting?

I actually started making landscapes to complement backgrounds for my character designs, and I kind of got addicted to them in the process. There is a certain satisfaction that can be gained from creating imaginary landscapes, and it's also incredibly fun to do.

Which artists/illustrators have influenced you most heavily, or strongly inspire you?

A lot! The amazing Stjepan Šejić taught me a lot, and I probably wouldn't have gotten anywhere without his

help. People like Kekai Kotaki and Raphael Lacoste are other amazing artists that influenced me. But there is a plethora of people I admire, and I could go on forever naming them.

What skills did you transfer over from traditional to digital art media?

At first, when I started delving into digital painting, I completely neglected the basics you learn in traditional art. Needless to say, that was a huge mistake. I found myself so overwhelmed with the possibilities that Photoshop offers that I made a few bad mistakes. At some point I realized that you don't need 500 brushes to make a picture; one is all you actually need. Everything you do on paper is the same as what you do on screen, but digital is faster and easier since you have layers and, of course, an undo button. The realization that there is no difference between traditional and digital at its core led to improvements in my work. Traditional art basics are, and will always be, the building blocks for whatever media you choose to express yourself with.

Elsewhere you've talked about stumbling across some

amazing art on the internet that inspired you to learn to paint digitally. What was it that spoke to you in the art you found?

It was the fantasy part of them. I saw art depicting places that don't exist, made in the creators' imagination. It was awe inspiring how they could create such worlds and characters. I got hooked instantly, and there was no turning back for me.

What do you feel you have gained from participating in deviantART and CGHUB?

Definitely access to some of the most amazing artists around the world. That's what's great about communities like this, the concentration of the world's amazing talent in one spot. It teaches you to be humble when you see all the amazing art created around the world, but it also creates a drive to improve your own skills. If they can do it, why couldn't I as well?

Are you working to develop any particular skills right now? Are there things you'd like to be able to do a few years from now that aren't yet within your grasp?

There are many things I'd like to be able to do, but understanding that progress in art is a lifelong process that never actually ends is very important. I'm sure that 10 years from now I'll still have a lot to learn, and I'll look back and think, "How did I not figure that out sooner?" But painting is an experience-based process: You learn from mistakes, and you learn over time. There is no way around it. No matter how talented you are, if you do not put in the time, you will not improve. Currently I am mostly focused on improving my speed; it's very important to make things as quickly as possible.

A number of your paintings have a strong comics sensibility, and your deviantART gallery contains some comic book fan art. Do you want to work in comics, or do other areas hold your interest?

I do like comic books, but I don't think I could work in the comic book area. It requires quite a unique set of skills that many artists excel at, and I have huge admiration for them. I am more of a concept art person, and making different versions of certain things, or something different, is what appeals to me.

J. T. Glover has published fiction, non-fiction, and poetry in *Dark Recesses* and *Underground Voices*, among other venues. Born and raised in the Pacific Northwest, he currently resides in Richmond, Virginia with his wife and a not inconsiderable number of fur-bearing friends. By day he is an academic reference librarian specializing in the humanities.

The Bookmaking Habits of Select Species

Ken Liu

There is no definitive census of all the intelligent species in the universe. Not only are there perennial arguments about what qualifies as intelligence, but each moment and everywhere, civilizations rise and fall, much as the stars are born and die.

Time devours all.

Yet every species has its unique way of passing on its wisdom through the ages, its way of making thoughts visible, tangible, frozen for a moment like a bulwark against the irresistible tide of time.

Everyone makes books.

The Allatians

It is said by some that writing is just visible speech. But we know such views are parochial.

A musical people, the Allatians write by scratching their thin, hard proboscis across an impressionable surface, such as a metal tablet covered by a thin layer of wax or hardened clay. (Wealthy Allatians sometimes wear a nib made of precious metals on the tip of the nose.) The writer speaks his thoughts as he writes,

causing the proboscis to vibrate up and down as it etches a groove in the surface.

To read a book inscribed this way, an Allatian places his nose into the groove and drags it through. The delicate proboscis vibrates in sympathy with the waveform of the groove, and a hollow chamber in the Allatian skull magnifies the sound. In this manner, the voice of the writer is re-created.

The Allatians believe that they have a writing system superior to all others. Unlike books written in alphabets, syllabaries, or logograms, an Allatian book captures not only words, but also the writer's tone, voice, inflection, emphasis, intonation, rhythm. It is simultaneously a score and a recording. A speech sounds like a speech, a lament a lament, and a story re-creates perfectly the teller's breathless excitement. For the Allatians, reading is literally hearing the voice of the past.

But there is a cost to the beauty of the Allatian book. Because the act of reading requires physical contact with the soft, malleable surface, each time a text is read, it is also damaged and some aspects of the original irretrievably lost. Copies made of more durable materials inevitably fail to capture all the subtleties of the writer's voice, and are thus shunned.

In order to preserve their literary heritage, the

Allatians have to lock away their most precious manuscripts in forbidding libraries where few are granted access. Ironically, the most important and beautiful works of Allatian writers are rarely read, but are known only through interpretations made by scribes who attempt to reconstruct the original in new books after hearing the source read at special ceremonies.

For the most influential works, hundreds, thousands of interpretations exist in circulation, and they, in turn, are interpreted and proliferate through new copies. The Allatian scholars spend much of their time debating the relative authority of competing versions, and inferring, based on the multiplicity of imperfect copies, the imagined voice of their antecedent, an ideal book uncorrupted by readers.

The Quatzoli

The Quatzoli do not believe that thinking and writing are different things at all.

They are a race of mechanical beings. It is not known if they began as mechanical creations of another (older) species, if they are shells hosting the souls of a once-organic race, or if they evolved on their own from inert matter.

A Quatzoli's body is made out of copper and shaped

like an hourglass. Their planet, tracing out a complicated orbit between three stars, is subjected to immense tidal forces that churn and melt its metal core, radiating heat to the surface in the form of steamy geysers and lakes of lava. A Quatzoli ingests water into its bottom chamber a few times a day, where it slowly boils and turns into steam as the Quatzoli periodically dips itself into the bubbling lava lakes. The steam passes through a regulating valve—the narrow part of the hourglass—into the upper chamber, where it powers the various gears and levers that animate the mechanical creature.

At the end of the work cycle, the steam cools and condenses against the inner surface of the upper chamber. The droplets of water flow along grooves etched into the copper until they are collected into a steady stream, and this stream then passes through a porous stone rich in carbonate minerals before being disposed of outside the body.

This stone is the seat of the Quatzoli mind. The stone organ is filled with thousands, millions of intricate channels, forming a maze that divides the water into countless tiny, parallel flows that drip, trickle, wind around each other to represent simple values which, together, coalesce into streams of consciousness and emerge as currents of thought.

Over time, the pattern of water flowing through the stone changes. Older channels are worn down and disappear or become blocked and closed off—and so some memories are forgotten. New channels are created, connecting previously separated flows—an epiphany—and the departing water deposits new mineral growths at the far, youngest end of the stone, where the tentative, fragile miniature stalactites are the newest, freshest thoughts.

When a Quatzoli parent creates a child in the forge, its final act is to gift the child with a sliver of its own stone mind, a package of received wisdom and ready thoughts that allow the child to begin its life. As the child accumulates experiences, its stone brain grows around that core, becoming ever more intricate and elaborate, until it can, in turn, divide its mind for the use of its children.

And so the Quatzoli *are themselves* books. Each carries within its stone brain a written record of the accumulated wisdom of all its ancestors: the most durable thoughts that have survived millions of years of erosion. Each mind grows from a seed inherited through the millennia, and every thought leaves a mark that can be read and seen.

Some of the more violent races of the universe, such

as the Hesperoe, once delighted in extracting and collecting the stone brains of the Quatzoli. Still displayed in their museums and libraries, the stones—often labeled simply “ancient books”—no longer mean much to most visitors.

Because they could separate thought from writing, the conquering races were able to leave a record that is free of blemishes and thoughts that would have made their descendants shudder.

But the stone brains remain in their glass cases, waiting for water to flow through the dry channels so that once again they can be read and live.

The Hesperoe

The Hesperoe once wrote with strings of symbols that represented sounds in their speech, but now no longer write at all.

They have always had a complicated relationship with writing, the Hesperoe. Their great philosophers distrusted writing. A book, they thought, was not a living mind yet pretended to be one. It gave sententious pronouncements, made moral judgments, described purported historical facts, or told exciting stories . . . yet it could not be interrogated like a real person, could not answer its critics or justify its accounts.

The Hesperoe wrote down their thoughts reluctantly, only when they could not trust the vagaries of memory. They far preferred to live with the transience of speech, oratory, debate.

At one time, the Hesperoe were a fierce and cruel people. As much as they delighted in debates, they loved even more the glories of war. Their philosophers justified their conquests and slaughter in the name of forward motion: War was the only way to animate the ideals embedded in the static text passed down through the ages, to ensure that they remained true, and to refine them for the future. An idea was worth keeping only if it led to victory.

When they finally discovered the secret of mind storage and mapping, the Hesperoe stopped writing altogether.

In the moments before the deaths of great kings, generals, philosophers, their minds are harvested from the failing bodies. The paths of every charged ion, every fleeting electron, every strange and charming quark, are captured and cast in crystalline matrices. These minds are frozen forever in that moment of separation from their owners.

At this point, the process of mapping begins. Carefully, meticulously, a team of master cartographers,

assisted by numerous apprentices, trace out each of the countless minuscule tributaries, impressions, and hunches that commingle into the flow and ebb of thought, until they gather into the tidal forces, the ideas that made their originators so great.

Once the mapping is done, they begin the calculations to project the continuing trajectories of the traced out paths so as to simulate the next thought. The charting of the courses taken by the great, frozen minds into the vast, dark terra incognita of the future consumes the efforts of the most brilliant scholars of the Hesperoe. They devote the best years of their lives to it, and when they die, their minds, in turn, are charted indefinitely into the future as well.

In this way, the great minds of the Hesperoe do not die. To converse with them, the Hesperoe only have to find the answers on the mind maps. They thus no longer have a need for books as they used to make them—which were merely dead symbols—for the wisdom of the past is always with them, still thinking, still guiding, still exploring.

And as more and more of their time and resources are devoted to the simulation of ancient minds, the Hesperoe have also grown less warlike, much to the relief of their neighbors. Perhaps it is true that some books do have a

civilizing influence.

The Tull-Toks

The Tull-Toks read books they did not write.

They are creatures of energy. Ethereal, flickering patterns of shifting field potentials, the Tull-Toks are strung out among the stars like ghostly ribbons. When the starships of the other species pass through, the ships barely feel a gentle tug.

The Tull-Toks claim that everything in the universe can be read. Each star is a living text, where the massive convection currents of superheated gas tell an epic drama, with the starspots serving as punctuation, the coronal loops extended figures of speech, and the flares emphatic passages that ring true in the deep silence of cold space. Each planet contains a poem, written out in the bleak, jagged, staccato rhythm of bare rocky cores or the lyrical, lingering, rich rhymes—both masculine and feminine—of swirling gas giants. And then there are the planets with life, constructed like intricate jeweled clockwork, containing a multitude of self-referential literary devices that echo and re-echo without end.

But it is the event horizon around a black hole where the Tull-Toks claim the greatest books are to be found. When a Tull-Tok is tired of browsing through the endless

universal library, she drifts toward a black hole. As she accelerates toward the point of no return, the streaming gamma rays and x-rays unveil more and more of the ultimate mystery for which all the other books are but glosses. The book reveals itself to be ever more complex, more nuanced, and just as she is about to be overwhelmed by the immensity of the book she is reading, she realizes with a start that time has slowed down to standstill, and she will have eternity to read it as she falls forever towards a center that she will never reach.

Finally, a book has triumphed over time.

Of course, no Tull-Tok has ever returned from such a journey, and many dismiss their discussion of reading black holes as pure myth. Indeed, many consider the Tull-Toks to be nothing more than illiterate frauds who rely on mysticism to disguise their ignorance.

Still, some continue to seek out the Tull-Toks as interpreters of the books of nature they claim to see all around us. The interpretations thus produced are numerous and conflicting, and lead to endless debates over the books' content and—especially—authorship.

The Caru'ee

In contrast to the Tull-Toks, who read books at the grandest scale, the Caru'ee are readers and writers of the

minuscule.

Small in stature, the Caru'ee each measure no larger than the period at the end of this sentence. In their travels, they seek from others only to acquire books that have lost all meaning and could no longer be read by the descendants of the authors.

Due to their unimpressive size, few races perceive the Caru'ee as threats, and they are able to obtain what they want with little trouble. For instance, at the Caru'ee's request, the people of Earth gave them tablets and vases incised with Linear A, bundles of knotted strings called *quipus*, as well as an assortment of ancient magnetic discs and cubes that they no longer knew how to decipher. The Hesperoe, after they had ceased their wars of conquest, gave the Caru'ee some ancient stones that they believed to be books looted from the Quatzoli. And even the reclusive Untou, who write with fragrances and flavors, allowed them to have some old bland books whose scents were too faint to be read.

The Caru'ee make no effort at deciphering their acquisitions. They seek only to use the old books, now devoid of meaning, as a blank space upon which to construct their sophisticated, baroque cities.

The incised lines on the vases and tablets were turned into thoroughfares whose walls were packed with

honeycombed rooms that elaborate on the pre-existing outlines with fractal beauty. The fibers in the knotted ropes were teased apart, re-woven and re-tied at the microscopic level, until each original knot had been turned into a Byzantine complex of thousands of smaller knots, each a kiosk suitable for a Caru'ee merchant just starting out or a warren of rooms for a young Care'ee family. The magnetic discs, on the other hand, were used as arenas of entertainment, where the young and adventurous careened across their surface during the day, delighting in the shifting push and pull of local magnetic potential. At night, the place was lit up by tiny lights that followed the flow of magnetic forces, and long-dead data illuminated the dance of thousands of young people searching for love, seeking to connect.

Yet it is not accurate to say that the Caru'ee do no interpretation at all. When members of the species that had given these artifacts to the Caru'ee come to visit, inevitably they feel a sense of familiarity with the Caru'ee's new construction.

For example, when representatives from Earth were given a tour of the Great Market built in a *quipu*, they observed—via the use of a microscope—bustling activity, thriving trade, and an incessant murmur of numbers, accounts, values, currency. One of the Earth

representatives, a descendant of the people who had once knotted the string books, was astounded. Though he could not read them, he knew that the *quipus* had been made to keep track of accounts and numbers, to tally up taxes and ledgers.

Or take the example of the Quatzoli, who found the Caru'ee repurposing one of the lost Quatzoli stone brains as a research complex. The tiny chambers and channels, where ancient, watery thoughts once flowed were now laboratories, libraries, teaching rooms, and lecture halls echoing with new ideas. The Quatzoli delegation had come to recover the mind of their ancestor, but left convinced that all was as it should be.

It is as if the Caru'ee were able to perceive an echo of the past, and unconsciously, as they built upon a palimpsest of books written long ago and long forgotten, chanced to stumble upon an essence of meaning that could not be lost, no matter how much time had passed.

They read without knowing they are reading.

Pockets of sentience glow in the cold, deep void of the universe like bubbles in a vast, dark sea. Tumbling, shifting, joining and breaking, they leave behind spiraling phosphorescent trails, each as unique as a signature, as they push and rise towards an unseen surface.

Everyone makes books.

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Love Might Be Too Strong A Word

Charlie Jane Anders

Here's how I remember it:

A touch shocked me. I was reaching for a flash-seared bog-oyster, and then a fingertip, softer than I'd ever felt, brushed my knuckle. The softness startled me so much, it took me a moment to realize the hand had seven fingers, three more than mine.

Be held a striped cloth in ber other hand. I came up with the correct pronoun by instinct, even before my mind took in the fact that a pilot was touching my hand. Holy shit, a pilot!

I turned. Be smiled at me, mouth impossibly small, eyes panoramic and limpid. So beautiful I wanted to choke. "You dropped this," be said. My bandana looked so foreign in ber fingers, I almost didn't recognize it.

And then be tied it around my neck, so gently I couldn't help shivering. Those fingers!

And then, it opened. Just a tiny dilation, but I almost had to lean against the cafeteria table. Everyone in the universe was watching. I knew, without reaching around, that there was a teeny wet spot on the small of my back.

Until that moment, I'd barely ever thought about my

harnt, the little hole just above my tailbone. It was just there. It had never opened on its own, much less gotten wet. And nobody had ever touched it, of course. And now, somehow it knew.

My harnt closed again, but it didn't make as tight a seal as before. Or at least, it felt restless. It was going to bother me. Right now, it was all I could think about.

The pilot had finished tying my bandana, but kept looking at me. "You're so lovely," he said to me. "What's your name?"

"Mab." I managed to avoid stammering.

"Short for Mabirelle." He smiled. "I'm Dot." And then he bowed and left me to face the stares of my fellow daily's.

Here's how they tell it:

Ah love, mystery confounding! Oh lovers, your sighs the dark matter that limns our course. Who can understand the ways of love: ever cruel, ever bountiful? Not the boides, not the breeders, not even the spirers with their countless eyes and base-27 calculations!

Dot lo Manaret, honored third-level pilot of the City, known for her gallantry and aplomb, was never word-lost. Until the day he wandered down to the daily canteen and her eyes fell upon the surpassing loveliness of Mabirelle,

most radiant of all the dailys. In that instant, Dot's heart fell into Mabirelle's pocket, and Dot's eyes, which had encompassed interstellar space, now had one vista only. Lost was Dot, lost forever, to the love of Mabirelle!

A chasm wider than the Inner Axis separated these two lovers, one from the highest dar, the other from the lowest. Pity poor Dot and Mabirelle, their love against all society's norms, their furtive meetings stolen from the moments between their far-separate undertakings. Theirs must be a fleeting happiness, but how bright the afterimage!

Love, why do you torment us so? Why must we pine, so far from our Cluster and from our new homeworld? Is happiness a mere whisper on the edge of daydreams? Why, love, why? But love, as ever, disdains to answer. Our tears must be question and answer both!

Love! Love is all they ever talk about, and I've avoided it like the unshielded areas where the Outrangers work. The stupid, stupid courtship, the crappy poetry, the singing, the dreamliminals . . . they consume our lives when we're not working, and usually even when we are. It's a miracle the City hadn't spun off course into an Oort cloud long ago.

But really, it's true. The City runs on love. It keeps us sane, more or less. Unlike the dark matter that flows into

our massive converters, it's an infinitely renewable fuel. As to whether it pollutes, you probably already have your own opinions about that.

Right after the bandana incident, my sibs started treating me differently. "Mab, I heard be kissed you! That darling little mouth!" "Mab, isn't be beautiful? Oh, of course be's beautiful!" Sometimes they teased: "Mab's going to be a pilot's mate! Mab, what's your secret? Did you steal a holo-shield?" I know for a fact that a few of the other dailys have been with pilots, but furtively, in dark song-booths or under laundry decks.

One daily even tried to sneak me a bubble of some noxious substance. I was supposed to squirt it onto my harnt to make it more pleasant to Dot when be manned me. As if I would ever let that happen.

Because we clean the entire City, handle the waste units and supply the food, dailys go everywhere. The lower middle dars, the boides and the outringers, romance us sometimes. The upper middle dars, occasionally. But no pilot had ever romanced a daily, as far as any of us remembered. Until now.

I figured a few days would pass, then the stupid talk would stop and the other dailys would go back to being my friends and letting me finger them in their bunks when nobody was looking.

Then the poem showed up. Typical courtship crap: Dot tight-beamed it to my handle, but “forgot” to encrypt it. Which means everybody in the City saw it before I did. “No food can I taste, my course corrections go awry. I falter in everything, dreaming of your touch. Oh Mabirelle! Your Dot will die without you.”

In other words: “Woman to me, or I’ll send the City a fraction off course, and we’ll all die in starless space.” And that’s supposed to be romantic!

At that point, I was doomed. They all took turns reading it and squealing. My so-called best friend, Idra, kept hugging me and jumping up and down until I wanted to smack ym. “Mab, it’s so beautiful! It’s like something from a sugar-box holo!”

“Oh yeah, it’s great.” I didn’t even try to sound excited.

It’s weird: I would have given anything for the other dailys to stop being ashamed of me. Even when they let me finger all their holes after lights-out, they wouldn’t look at me. They were always trying to introduce me to some dashing boide so I could woman like everybody else. Ever since we left the Cluster, they kept trying to fix me. Now, for the first time, they were proud of me, and I wanted to die.

I don’t woman. I just don’t.

Oh, I have the involuntary responses just like everybody else. When I meet a particularly stout outringer, my ruhr feels a little itchy. I make a habit of wearing a scarf when I clean the outringers' quarters, so they won't see anything. But I just don't like the idea.

A couple of days after the poem, Dot turned up again. Oh, be didn't come over and say hi like a normal person. Of course not. Instead, be turned up in the cafeteria where we'd first met, perched on top of the air shaft on ber knees. Be had all fourteen fingers on a big flarinelle and was playing some dirge-y shanty while moaning about how ber heart was imploding for the love of me. Be wore an outfit with a million laces and buckles, maybe just to remind me just how clever ber fingers were.

I wanted to turn and run back to the dailys' hab areas, but my sibs all grabbed me and cried all over my favorite quicksuit. I had to stay and listen to the whole fucking thing. Dot couldn't sing to save ber life. After that, I was the dailys' greatest romantic hero ever. When was I going to send a poem back? When would I acknowledge Dot's suffering?

The next day, I was on my hands and knees scrubbing the boides' segment. They always claim our knees and backs are genetically engineered to make us better scrubbers. They're filthy liars. Or at least it's not enough.

I hate cleaning up after the boides, who track all sorts of crap from the power units. At least I don't have to clean the power units themselves, since my body isn't designed to withstand those forces the way the boides are.

Anyway, I was crawling around trying to clean up some stuff that I didn't even want to think about. I heard some motion behind me, and scuttled around to see a boide staring at where my ass had just been.

At first, I thought po wanted to sexually harass me, which is what the boides usually want when I'm working. Dailys, like me, are pretty much the only dar the boides can man. They woman to the pilots, the outringers and the breeders. I've heard the boides can man the spirers, too, but it probably doesn't happen much.

"I had a great love once," the boide said. "And I let zm slip away, and I've never forgiven myself." Oh great. Romantic advice. All of a sudden, I wished the boide would just grope me. I could tell po wanted to, from the matching bulges on either side of por hip bones. But no. "We're in space for countless decades, but in all that time you may only get one chance at a great love," po said.

"Just because you blew off some dumb breeder once, doesn't mean you get to give me advice." I looked por over: a little less squat and greasy than most boides, but still a solid brick of muscle and radiation-resistant hide.

But nimble, the way you have to be if you manipulate the City's power grid.

“The breeders and the pilots are different from you and me,” po said. “They have higher concerns, loftier thoughts. When they train that light on us, it can feel like we're going to burn up. But it's the closest to real meaning, to glory, we can get.”

Normally, the boides treat us as if we're way beneath them. It's only in comparison to a pilot that po and I could become “we.” Or if po wanted to man me, we might be “we” for an hour or two. And po did want me, those twin bulges don't lie.

“Thanks for the advice,” I said. “I feel loftier already.”

“Don't laugh it off. When love comes, you have to,” blah blah blah. Po kept it up for the next hour or so, while I scrubbed and scraped. There are cleaning machines, of course, but they don't do such a great job with the really nasty stains. And the spirers are too busy doing “exalted” things to upgrade them.

It went on like that. People giving me advice. Worse, the other dailys wouldn't let me touch them anymore after lights out. “Mab, we let you touch us when there's nothing better around,” Idra told me while we waited to step into the bathing tubes. “But a pilot! I mean, don't

you think you should save yourself?”

“For what?” I asked, but then the tubes opened and we stepped in, to fall through a tunnel where water, and then supercompressed air, sprayed us. I’ve heard the pilots and spirers have baths.

I could never get tired of seeing Idra naked, even though I’ve bathed with ym so many times now, and touched ym in yr bunk. Even though Idra drove me nuts with yr crushes and yr face-pastes and yr romance dreamliminals, y kept me sane. I didn’t know what I’d do if I couldn’t talk to Idra. Maybe I even loved ym. A little.

We’d met back in the Cluster, when we were both training for this voyage. Idra and I had been grown for this mission, but we still had to train and prove ourselves. Basic safety stuff, mostly, since the City can’t replace us if we get ourselves killed out here. Idra was the only other one, besides me, in our class who’d asked about other stuff, like how the City navigated and how the power grid worked (or failed to, sometimes).

I’d started hanging out with Idra all the time between classes, and we’d laugh at the silly questions some of the other dailys asked, about how to get face-paste in the City. I’d thought yr and I would always share everything, until the City launched and y fell in love for the first time, with an outringer. Ever since then, it was one crush after

another, putting Idra in an elliptical orbit away from me and then back to me when it fell apart. I'd mostly gotten used to it.

“You know,” I told Idra when we were dressing afterwards. “There are only two reasons people are so love-crazy around here. Because the only children in the City are the dormant embryos in the breedpods, waiting for planetfall. And because it helps us forget we're stuck at the bottom of the heap forever.”

“If you talk to Dot like that, be'll drop you like a used snot-catcher,” Idra told me. Y had a warning look in yr eyes and mouth, but yr nose wrinkled the way it always did when I made ym laugh.

“That's a good idea,” I said. “Maybe I'll try that.”

Actually, here was my problem. I wanted to say no to Dot, but be never gave me a chance. Be never even asked me if I wanted to pair-bond with ber, or go live in the Pilot Quarter, or whatever. Be just kept sending little crystal cameos, serenading me from a safe distance, paying other dailys to make little delicacies for me. (A pilot wouldn't know how to cook to save ber life.) Be never came close enough for me to respond.

And yet, I was cruel. I was coy. I tormented Dot. Or so Dot claimed, and so the balladeers announced to the whole City. I was killing a pilot, one of only 500 in the

whole City, with my coldness. Had anyone ever been as cruel as me? In the entire history of the City, and the Cluster before that? Speaking of which, I was famous enough now that my sibs back in the Cluster were going to hear about this.

“I don’t get it,” I told Idra. “What am I supposed to do anyway? When he threw all those bright catsilk bandanas down to me from the upper walkway, I tried to avoid catching them, but you guys grabbed them for me. How am I supposed to respond?”

“Write back,” Idra said. “Write a poem, or if you can’t manage that, a regular letter. I’ll tight-beam it for you. You don’t even have to write it yourself, I’ll write it for you.”

Oh, Idra. I never wanted to be you, but I always want to be with you. I certainly never wanted you to want to be me.

“Can I write a letter asking her to leave me alone?”

“It’ll just make her try harder. Or maybe she’ll go away permanently, throw herself into the booides’ radiation zone. You can’t trifle with love, Mab. Love is the most powerful force in the universe. Love is unstoppable, unfathomable.”

“Yeah, yeah, yeah. Love. Got it.”

I have no idea how long Dot could have gone on courting me, showering me with tears from those massive eyes. I took the initiative. I sent Dot a message telling her to meet me in one of the song-booths in the dailys' quarter, where my sibs go to have furtive sex with other dars.

Dot wrote back, a dozen sonnets filled with leaping jubilation that I would hear her suit in person. But couldn't we meet someplace more romantic? Someplace more beautiful? There were some lovely little restaurants in the pilot quarter. (I knew that, since I'd worked in their kitchens.) Or we could sail a skimmer around the edge of the Outring, on dalfur cushions, with a flarinelle trio playing to us.

"Sorry," I wrote back. "You come to me, or no meeting."

I booked a song-booth and paid for it myself. Instead of some schlocky flarinelle music, I ordered up a couple hours of the most raucous slash-and-grab, the stuff they're always threatening to ban. I got there early, so I'd be sitting with my feet up when Dot got there.

I'll let you pretend you've never been inside a song-booth. Basically, they're coffin-shaped, with a bench running lengthwise and a big screen overhead showing patterns or dumb holo-stories. Big speakers at either end. Unless you're really tall, you can just about sit on the

bench if you scoot down, but eventually it becomes easier to lay on it lengthwise, which is what it's really there for. Nobody ever goes there to listen to music and watch pretty colors, unless they're really, really dumb.

Dot had feathers all over her slender body. There are no birds in the City, of course, and I've never even seen a bird. But I've cleaned up feathers and had a chance to examine them. They're synthetic, but intricate, with little strands that catch the light.

I hadn't seen Dot, up close, since our first meeting. I'd forgotten quite how delicate and lovely she was, how elegant those little bones. I wasn't prepared for the sudden awakening of my heart and the tightness inside my stomach.

“Oh Mab! Oh my Mabirelle! You do so much kindness to my poor faltering heart!” Dot had obviously memorized tons of this crap.

“Shut up and listen,” I said. “I've figured out why you're doing this.”

“There is no reason, other than your beauty, which so dazzles my eyes that all other sights are cataracted to me.”

“I said shut up. And sit down, you're making me nervous.” I gestured at the greasy cushion next to me. “So here's what I think: you're doing this for attention. You

were losing status, or playing some pilot game that the rest of us don't even grasp, and you decided to make yourself the hero in some epic love story. The pilot who fell in love with a daily against all odds. They'll sing about you forever, if you don't get thrown out of the upper rings for sullyng your honor. It's a gamble, but you're a shrewd one. Am I right?"

"Oh, my Mabirelle. Your wisdom is second only to your beauty, which far surpasses the brightest jewels. But no, you're wrong. There's no purpose to my love other than love itself. And no cure for my love other than your love returned to me."

"I was afraid you'd say that. Okay, let's go. I'll do you right here."

"But I—that's not what I—"

"If it'll end this. Come on, get all those feathers off you. I've never seen a pilot naked. I'm curious."

And I was curious. It's weird that pilots are the opposite of dailys, but most of us never get to see what they look like under their fancy ruffles. I helped Dot out of her five layers (!) of clothing, and slowly her body revealed itself. Be stared at me, terrified, as I ran my hands over her.

Naked, Dot was even more gorgeous than dressed. I couldn't stop swallowing. Be was all long sinews and

soft skin. Ber body was much the same shape as mine, or any other human, but slender where mine was stout. And be had all those extra appendages, where I only had holes.

“What does this one do?” I pointed to a long vine that curled out from Dot’s sternum.

“It’s uh, it’s my zud, for manning a spirer. They have an opening on that part of their bodies just for pilots, called the duz. It takes three days, and there are fifteen required positions.” It went on like that. The three bony prongs sticking out just below ber stomach were for manning a breeder, and ber thighs had matching lumps, which could expand to man an outringer. No matter what your dar, Dot had a way to man you. Just like I could woman to all the other dars.

“Don’t you want to see my, uh, my tharn?” Dot gestured to ber lower back, where the outie that matched my innie was quivering with excitement. Be started to turn around, but I stopped ber. Just being so close to ber naked body was making my harnt throb, opening and closing spasmodically like a busted airlock.

“Not really,” I said. “There’s no rush. And I’m curious.” I tried stroking some of the tendrils and spokes coming from the front of Dot’s body. Dot moaned with pleasure, but they didn’t grow any bigger, because I was the wrong dar to excite them. Pheromones.

“Don’t you want me to, uh, to man you?” Dot looked from her naked body to the quicksuit I was still wearing. It kept her from seeing that my lumbar region was soaked.

“Nope. I don’t woman. But I’ll man you if you want.”

I didn’t think it was possible for Dot’s eyes to get any bigger, but they did. Her eyes were as big as my thumbs.

“Pilots always man, dailys always woman. That’s just how it is.”

“That’s not how I play. You have openings. I have tools. And fingers.” My pinky was almost too big for Dot’s mouth, but I made it fit. She sucked on it, half moaning and half gulping. I felt like I was going to implode, I was so skin-crazy.

I left Dot naked and flushed, thanking me through bewildered tears. No more poetry, thank god.

I figured after that, Dot would leave me alone. I might have an even worse reputation than before, depending on what people heard. But that could be a good thing, and maybe some of the dailys would respect me a little more when they heard I’d manned a pilot.

I had to giggle to myself when I thought those words. I manned a pilot! Whatever came next would totally be worth it.

“You did what?” Idra hissed. Y dragged me further away from the other dailys, just in case they had super-hearing. We were in the noisiest canteen, with the crispiest deep-fried bog-oysters. (Don’t tell anyone I told you this, but those things aren’t oysters. They grow on the coolant ducts, they’re a kind of fungus.) The canteen’s walls had been bright red when we’d left the Cluster, but by now they were maroon, and the floors were sticky no matter how much we mopped.

“You heard me.” I giggled again. Normally, Idra was the giggler and I was the frowner. Oh, this was so worth it.

“How could you? I always knew you were . . . unnatural. But this? You could be killed! You could be killed and nobody would ever say anything. Stop laughing, Mab! I don’t know what I’d do. I don’t want to lose you. If Dot tells anyone, if he even whispers it, they’ll just erase you! I couldn’t bear that. Mab, why didn’t you think about me, before you went and threw everything away?”

It went on like that, Idra keeping yr voice low enough that none of the other dailys had a clue. It was so weird, I had to go and man a pilot to find out that Idra loved me too. Love might be too strong a word, but whatever. You get the idea.

“Idra, calm down. Be’s not going to tell anyone. What’s be going to say?”

“Exactly. What is be going to say? Think about the position you put ber in. After weeks of public courtship, you agreed to meet ber in private. Everyone is going to want to know what happened. And be is going to say . . . what? That you manned ber? That be manned you? That you rejected ber? What?”

Why did things have to be so complicated? Be wanted me, so I took ber. Why wasn’t that the end of it? But even as I was reassuring Idra that everything was fine, I felt another sensation, as unfamiliar as my harnt’s opening had been. They could erase me any time they wanted. I felt weak inside.

“Oh chaste Mabirelle! Oh cruel, virtuous Mabirelle, that withstood temptation’s nearness with yr far-seeing gaze! How can we praise your inviolate harnt, O Mabirelle?”

I was as shocked as anyone else. Apparently, I wasn’t a crazy slut, I was a chaste virgin. Who had cruelly denied Dot’s advances even though we were in a tiny padded and sound-proofed tube. Though Dot importuned me, I preserved my virtue. Dot proved this by showing someone that ber tharn retained its outer membrane, which meant it had never been inside me.

I didn't even know that a pilot's tharn had an outer membrane. You learn something new every day.

As the story went, I had arranged the song-booth meeting as an elaborate test to see if Dot could respect my chastity in such close quarters. As if Dot would have been capable of overpowering me anyway! And now that Dot had passed the test, I had agreed to hear ber pair-bonding proposal.

I was grateful to Dot for coming up with an explanation of the facts that didn't require anyone to toss me into the Inner Axis. But proposals? The way Idra explained it, I wasn't committed to pair-bonding with Dot, just hearing ber suit.

Nobody even knew how pair-bonding would work between a pilot and a daily. It wasn't very likely that I'd be able to go live with Dot, and the idea of Dot trying to share my bunk in a roomful of twenty dailys made me giggle. With no children and no property, it was mostly a fancy license for Dot and me to do what we'd already done in that song-booth. Except maybe the other way around.

So this time I had to go up to the pilot quarter, where the air is purer and the gravity lighter. Gleaming star-charts on all the walls and varvet covering every surface. I had to keep ducking to avoid the little nozzles spraying

perfumey crap and aromatherapy at me. I usually wore my bandana around my mouth and nose when I cleaned around here, but I figured Dot might take it as an insult.

“Hey,” I said to Dot. “Thanks, for coming up with a good story. You’re good at that, huh? Telling stories. I have to kick myself to keep from believing the stuff you say about me, and I know myself pretty well.”

Dot started saying it was all true, and then some. Be wore even more layers than last time, if that was possible, and sat cross-legged on the edge of a massive crescent-shaped couch on the edge of a fake gravity well. You could toss things into it and watch them shrink to a singularity, but it was just an illusion. Dot didn’t need to wear the extra buckles, since I would hardly molest her with five chaperones watching us from just outside earshot.

“Anyway, I’m grateful to you. Which is why I’m here,” I said, sitting a decent distance away from her on the crescent thingy.

“Mabirelle, because I love you so, I want to be totally honest with you,” Dot said. That sounded like a good idea, so I nodded. Be went on: “I told you the truth before, when I said there was no hidden agenda here. But there is something you don’t know. Can you keep a secret?”

“You have no idea how many secrets I’ve kept,” I

said. “You can trust me, don’t worry.”

Dot had to pause to offer me chocolates and little cameos, and order up fancy music. Then he went on. “The spirers think they’ve developed a much more accurate long-range scanning technique by combining stellar resonance and high-spectrum ghosting.” He waited for me to murmur my understanding, then went on. “We think it’s dead.”

“What’s dead?” At first I thought he meant the little dove-hen I was holding.

“The planet. Our colony world. Coriolanus, or whatever they’re calling it this week. The breedpods won’t function there, the breeders won’t be able to sustain a new generation.”

“So we left the Cluster for nothing. We’re sailing towards nothing. This, all of this, is all for nothing.” I gestured around, to indicate the whole City.

“Yes.”

“Can we turn back?” I already knew the answer before he shook his head, but it still felt like a crack in my gut. He started talking about desperate alternatives: slingshot maneuvers, stellar recharges, increased dark-matter efficiency, but I was still saying “dead world” to myself, over and over. “Dead world.”

“I can’t stand it among the other pilots any more, or

any of the upper dars. The spirers with all those fingers, with their base-27 cleverness. The breeders, tending those breedpods as if they're going to amount to something. It all makes me feel so hopeless. But when I'm with you, it's different. I feel alive. Like life is worth something after all."

I started to ask why we couldn't tell everyone the truth, but that was a stupid question, and I don't ask stupid questions. If I thought people in this City were crazy now, just imagine if they knew they were trapped and it was pointless.

"Love," I muttered. "Fucking love. It can't save you from shit. It's just anesthetic."

"Maybe," Dot said. "But it's life-saving. Mabirelle, I meant everything I said before. Your beauty, your wisdom, the longing inside me. It wasn't a pantomime, or a distraction from my existential crisis. It was itself. I love you, and I can't bear to be away from you."

I didn't love Dot, but I liked her more and more. Even though he had left me in an ugly spot. I could turn her down, but then what? I could spend the next few decades among the dailys, knowing we were going nowhere. The dailys would never treat me the same after this, once I went from being the romantic heroine to being the fool who spurned a pilot. They might never let me touch them

again. And I wasn't sure I could go back to being who I'd been, even if they'd let me.

I took a deep breath and looked around this foolish room. I couldn't help laughing, and then I had to reassure Dot that I wasn't laughing at her. "Sorry, sorry. It's just all this. How can you live like this? It's ridiculous."

"I'm used to it, I guess," Dot said. "You know what they say about pilots, we're not like other people. I know everyone makes fun of us behind our backs."

"Yeah, but not as much as they make fun of the spirers." I got my giggles under control and then looked into Dot's eyes, which looked like they could swallow me whole. "Listen, I can't live here. But I can't go back either. Can you make me a little love-nest, like in those dumb dreamliminals? A little place where I can live and you can visit? Not in the daily quarter, but not here either."

Dot thought about it for a moment, then started rattling off the various lavish apartments in the interstices between the City quarters, where I could live in luxury. Eventually, he came up with something a bit more realistic, but still comfortable. Even if I was going to be a kept daily, I didn't want to be over the top.

"I guess we can give it a try," I said. "Just two more things. I want my friend Idra to come live with me. So I

don't go nuts with loneliness when you're not around. Y needs yr own space, so y can entertain whoever y's madly in love with this week. And the other thing is, I won't woman to you. I can think of a few other ways to get rid of that pesky membrane on your thorn, don't worry. But I just don't like the idea of back-to-back sex, it's too weird. Oh, and my name is Mab, not Mabirelle or anything else. Okay?"

It wasn't the kind of courtship Dot had had in mind. And when the minstrels sang of our pair-bonding and the dreamliminals recreated it, they portrayed it very differently. The quivering Dot, the beautiful unyielding Mabirelle, the hours of ardent supplication before I finally consented to turn my back on ber and become ber mate, all that crap. I had to bite my tongue whenever people started carrying on. But I was starting to learn that you had to leave people their romantic illusions.

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Flash Bang Remember

Tina Connolly & Caroline M. Yoachim

Red-haired Mother, with her sharp nose and freckled chest, leaned low over the hydroponics channel and declared that the dead plants were Girl23's fault.

“When I was your age, I planted tomatoes too,” said Red-haired Mother. “But I forgot to refresh the nutrient supply in the water stream.”

“Yes, that's right. I forgot to add nutrients,” agreed Father. Girl23 thought of him as Short Chubby Father, and she wasn't too fond of him. “We had just left Earth, and one of the astrogators let me hang out with him and watch the stars. He was teaching me navigation, and I went every free minute I had—”

“And I totally forgot about my plants and they died,” finished Mother. “Just like yours did. But I learned a valuable lesson about responsibility.”

Girl23 looked up mutinously. “I didn't forget.”

“Now, now,” said Mother. “Protesting is natural.”

“I wouldn't admit it at first either,” said Father. He looked at Mother and they smiled.

Girl23 scowled and crushed her gardening glove in her fist. She wanted to scream: “I didn't forget my plants,

you idiots! Something clogged the drain and they got waterlogged!” But she kept her temper in check, because otherwise Red-haired Mother would start in on Childhood Sequence #112 (remind Child of the time you lost your temper and broke your handheld; follow with the admonition that anger is Unharmonious). Girl23 was thoroughly sick of Childhood Sequence #112. She was also sick of Red-haired Mother, but she had another three months before a new one would be assigned to replace her.

Father eyed the crumpled gardening glove and said hastily, “It’s good to make mistakes, Daughter. That’s how we learn and grow . . . and you know we love you no matter what.” It was Standard Reassurance #1, but unlike some parents, Girl23 knew he meant it, in his clumsy way. It wasn’t his fault that parenthood was a six-month shift where people rotated in and out before they could learn anything that wasn’t in the manual. Father patted Girl23’s head, then turned to Mother. “Say, Marie—speaking of our childhood, did you hear the news about The Child?”

Mother picked up one of the limp yellow plants and dropped it in the compost. “Daughter and I were busy going over Algebra this morning,” she said. To Girl23 she added, “I would help you with hydroponics, but I lost

my knack as an adult.”

“It’s okay,” muttered Girl23. Normally, she would protest that she didn’t need Red-haired Mother’s help, but Father was trying to steer them to Childhood Sequence #202, where adults discussed important news as a distraction technique. Usually this was deadly boring, but not if it was about The Child.

Girl23 hoped Mother would play along so she could find out more. She was pretty sure she would—this Mother did everything by the book.

“So you haven’t heard?” Father prompted.

“No—what’s happening to him?” Mother said.

“They’re pulling him out of stasis,” said Father.

“We’ll all get to finally meet him, and they’re going to record him becoming an adult. Record his whole life. So we can have more than just childhood in common. We will always be able to share his memories, and learn from his mistakes. We will understand each other in true and perfect harmony.”

Girl23 dropped the tomato plant she was pulling.

“Record him forever? His whole life? Are you *serious*?”

“Serious as the broken arm I fractured on the ceiling of the Zero-Grav chamber,” said Father.

“Boy, that hurt,” said Mother.

Mother and Father touched their left arms,

remembering.

Girl23 ran down corridor M-12 with her gardening gloves still balled up in one hand. Record him. *Record him!* She charged past a cluster of grownups holding cups of coffee, startling them. One laughed. “I once bowled over a physicist on B-35,” he said, and then they all laughed, remembering. Girl23 ducked into a systems maintenance closet, slid the door closed, and threw herself onto the floor.

It was bad enough to be the only kid on ship. It was worse that she was being recorded. All the adults on board, from seventeen to eighty, had been vat-grown with a single imprinted childhood. *The Child* was a sickeningly perfect paragon who killed his plants but learned responsibility, who broke his left arm in the Zero-Grav but learned caution. The process kept kids from getting in the way, and shared memories promoted harmony and understanding, traits the colony was big on.

Then, forty years ago, Psych had decided it would be good for the women to have a female childhood to remember, to counter the inevitable dysmorphia of climbing out of a vat at seventeen and suddenly discovering you were a woman. (There was a numbered process for that rehab too.) Thus the parade of Girls, and

Girl23 was not insensible of the honor and duty of her position.

But lately that didn't seem to be enough. The fact that everything was recorded choked her, suffocated her. Oh, her rebellious thoughts were safe enough, too fine-grained to store or remember. But her emotions, her experiences, her activities—knowing that she was being pruned and groomed like one of her tomato plants colored every thought and motion. That knowledge had been too much for Girls 4-7, and also for 14 and 19. None of the others had made it as far as Girl23—they had all failed in various ways. No one held it against them; they were simply wiped and reimprinted with The Child's perfect, non-neurotic childhood. Girl23 made it through some days on sheer determination not to let the colony down. Besides, they had promised her it was only until she turned seventeen. One more year.

Until a few minutes ago she had believed them.

Girl23 pulled her hair aside and ran her fingers over the tiny slot in the base of her neck. She could feel one edge of the alloy case that housed her chip. A chip that would feed a delightful and well-balanced childhood into every single woman vat-grown on ship. Women who wouldn't have to go through this. Women who would come out of the vats and live their own life, without

anybody turning everything they did into a *learning experience*.

Anger seized her and she rummaged through the tools in the maintenance closet until she found a metal pin dangling through a metal hole on one of the shelves. She shoved her hair out of the way, and after several failed attempts, managed to angle the pin into the tiny indented button that would release the chip. It snicked out, and she seized it with her fingernails.

Her chip.

It didn't look big enough to hold her memories, didn't look significant enough to be every memory that every woman born on the ship would need. She could break it right now and be free.

But she didn't want to.

It seemed too much like destroying her actual memories, though she knew perfectly well that destroying the chip wouldn't change anything in her brain. It didn't matter.

She looked around the storage room. Way in the back she found a small plastic container for housing other disks, bigger disks. She dropped her chip into it, closed it securely, and programmed the front label . . . Tomato Plant Study. Yes, that would do.

It was the first thing she had ever done that no one

else would ever know.

A week went by and nobody noticed that her chip was gone. This should have been good, because if nobody noticed, she could get away with it. But instead she was frustrated because it hadn't changed anything. All the adults were as obnoxious as ever, with their little in-jokes and their stories that they all knew and she didn't. They had memories she would never know, memories where they said one word—"pineapple" was a particularly common offender—and it was enough to trigger a wave of hysterical laughter.

And she would never know them. There wasn't going to be a magic moment when she woke up and belonged to that club, a moment when she suddenly fit in. She didn't have their childhood, and that was always going to make her an outsider. As much as the adults made her mad, she'd been alone for sixteen years and hated that. Now with her chip gone and nothing changed, it occurred to Girl23 that no one would *ever* understand her. Not until they started imprinting other women with *her* memories, and it would take years of simulation and debate before Psych could approve that. By the time the first batch of women was actually grown, she'd be dead. Or at least *old*.

She pressed her forehead against the wall, thinking.

She wanted The Child's memories so she could fit in. She needed to go back to the tank and be rebooted—Childhood Sequence #999. Therefore, she needed to do something worth rebooting.

She needed to fail.

Girl23 didn't know how to fail. She'd spent her whole life trying to do what the enormous ship full of adults expected of her. Doing the opposite was bizarre, foreign.

She was supposed to be on her way to study Chemistry with Alicia. She liked Alicia. Alicia had even been her Big Sister for six months, back when Psych thought that would be useful.

Girl23 spun around and marched the other way.

She was deliberately disobeying! At any moment an adult could step out from a corridor and identify her truancy. But she reminded herself that while the adults certainly seemed to know everything about everything, they probably didn't actually keep tabs on her schedule. She wouldn't, if she were an adult. Besides, she could be out on an errand. Or Alicia could be sick. Or—

Girl23 sternly reminded herself that her goal was to get caught.

She decided to head for the lounge on M-35, a place she had no business being. It was an area where adults

hung out and talked about boring stuff while they drank coffee. Her current Father liked to go there while she was Somebody Else's Problem. He'd take a handheld of the approved Child Psychology Literature to study, but really he just chatted with the other adults that came there on breaks. This current Father was somewhat lazy.

Regardless, he'd see her, and she'd get in trouble (because *he* wouldn't want to be caught slacking), and things would come to a head. It was perfect.

When she got to the lounge there was a huge crowd. Everyone swarmed around one central figure. She moved closer, trying to see.

The boy was tall, with a shock of black hair. He stood with the splay-legged, cautious stance of the newly risen. But only one newborn callow seventeen-year-old would be of this much interest.

The Child.

A fluttery, nervous feeling lurched up in her as she realized. There he was, him. *Him*. Amidst that crushing, pressing pile of ravenous adults.

The ship's charter encouraged harmonious behavior, which included not elevating any one person above another. But this was *The Child*. Of course everyone wanted to meet their past, the author of all their childhoods. Even the ones that were hanging off on the

sidelines, pretending to go about their business, wanted to meet him.

He looked bewildered. All this adulation must be strange to him. He'd been a nobody before, one child in a sea of children, one of the many chipped to find the perfect childhood to use. How odd to wake up and find yourself so popular—but then, he must have been well-liked before, to be chosen as The One.

He saw her. She was half-hidden behind a tall chair, trying not to be obvious, trying not to press in with the others, but he saw her. With imprinting and the required adjustment period, women never came out of the vats until they were nineteen, and Girl23 looked young for her age. Of course he noticed her.

“Hang on,” he said, and disentangled himself from his fans. She cringed as he drew everyone’s attention her way, but then she remembered that she was trying to get into trouble.

“You must be the Girl. The doctor told me about you.” He grinned at her, and it was like a bit of grow light flashing through all the fluorescents.

This was her chance. She could say anything to him. Ask him if he hated his chip, tell him what it was like to follow in his footsteps, ask if it was better to have only one mother or if it was the worst of all possible worlds.

But the thing that came out of her mouth was, “What does ‘pineapple’ mean?”

He looked at her curiously. “It’s a fruit, I think. Why?”

Her annoyance rose sharp and fast. “Fine, you won’t tell me either? That’s just mean.”

He grinned. Maybe this was a game; maybe he was teasing her for fun. The thought made something flutter inside. “They said you were interested in plants. I think they meant obsessed.”

“I’m not obsessed,” she said. She changed the subject. “Are they really going to record your adult life too?”

“Looks like it.” A strange flush that passed over his cheeks, even though he spoke easily enough. Did he not want to be recorded either? He looked down at her. “What do *you* mean by ‘pineapple’?”

“It’s one of your memories. The adults all say ‘pineapple’ and then they start laughing.” She shrugged.

He looked blankly at her. “I vaguely remember asking for pineapple once in the cafeteria. I’d read about it. The ship didn’t have it. That’s supposed to be funny?”

“I guess so,” she said. It seemed strange that The Child himself didn’t even know the adults’ jokes. How could you not fit in when everyone looked up to you?

When everyone kind of *was* you?

Behind him, a stubby figure approached.

“Oh, crud,” she said. “Short Chubby Father.” She slid sideways, keeping herself hidden from short Father’s line of sight. “Listen. I’m sick of being recorded. I took out my chip and hid it and then I skipped my lesson. I thought maybe if I was bad enough, they’d tank me. Do you think that would be pretty bad?”

The Child laughed. “I hid my chip three times before I figured out that the one they stick in our neck is a decoy.” He cocked his finger at her like a gun, a gesture a lot of the adults made. “It’s a standard part of growing up.”

“Oh. Great,” she said, thoroughly annoyed by his laughter, by the information, by her inability to do anything *new*. “Childhood Sequence #500, I bet.”

The Child looked puzzled.

Short Chubby Father popped out from behind The Child and took her arm, a big smile on his round face. “Finally, a chance for Childhood Sequence #604!” he said. “I’d thought we’d never get there.” He wagged a finger. “You’ve been too well-behaved.”

“What are all these sequences?” said The Child.

Father grinned. “Obviously you remember when we skipped English. Stupid Mrs. Blowski and her lame sentence diagrams.”

“Yes,” said The Child faintly. “Of course *we* skipped English . . .” He looked at short Father as if he were a puzzling tomato plant, dead of some uncertain cause.

“The parental response to that behavior is a teaching lesson, or what—back in our childhood—we called punishment. Number six-oh-four, right you are!” Short Chubby Father pointed a finger at her like a gun and mouthed “Bang!”

The Child shook his head as if trying to clear it. He nodded at Girl23. “Sorry,” he said. “I don’t think you’ll like number six-oh-four.”

Girl23 did not like #604 one bit. It turned out to be scrubbing the sludge out of the water purification and recycling unit. They drained whichever half of the room she was working on, but it was hot and damp, and the sludge felt like it was seeping into her pores. It smelled like chemicals and her hands turned red and pruney instantly. Worse, it had a thousand tiny crevices to scrub with a small brush, and she couldn’t even get her back into it and work out her annoyance because the wall-filters were too fragile. She had a week of it to do, two hours each morning—all for skipping one class. She wondered if they’d planned to dole this punishment out in stages, and that she’d ruined that plan by not getting into

trouble. Thus, all the punishment at once—and the filters were particularly gross, as if they'd been waiting for her.

She hated scrubbing, and she hated even more knowing that her delinquency had been planned—hoped for. Someday all the women would remember how they disobeyed the schedule and were punished. And Short Chubby Father had been lying in wait all this time with his manual, ready to apply this punishment when she finally rebelled. She was irritated to discover that she was predictable. It made sense that the adults were, since they all had the same background. But she was *different*.

She was cleaning a stubborn bit of green-black slime off of one of the filters when she heard the door slide open. She knew who it was without looking up and was suddenly nervous. She'd seen the adults hanging on him, being obnoxious. She wasn't like that. So why was she nervous? Logic told her it might have something to do with being the only teenage girl on the ship—and he was the only teenage boy, really. The other recently detanked boys might physically be the same age as him, but they didn't count. They were adults, and they'd gone through the whole detanking and reintegration process, something The Child clearly didn't need.

Well, except the physical therapy part of it. She eyed how he stood splay-legged, arms spread to keep his

balance. He'd been tanked longer than anybody ever had. But even if he walked funny, he was the only one who could really understand her. It was like she only had one chance to be cool.

Still, three whole days before he came to check up on her? *So* not cool. He should've come much sooner. He might be the coolest person on the ship, but she was sort of the second coolest, so there.

She looked up at him and said, "I see you're tired of your fans."

He kicked at the sludge. "When I was ten, I thought being famous would be cool. By the time I was fifteen I knew it would suck. And it does." Kick. "What can I ever have that's *me* again? Everyone knows everything about me. Broken arm? Check. Name of teddy bear? Check. Stupid time I ran up to the wrong mother? Check."

"Oh, I did that," said Girl23. "I was too little to know what rotating mothers meant. I ran up to the old one, and she was off-duty, hanging out with some guy who was not any of my fathers. Is that what you did?"

He peered down at her. "You really don't know. No, I just had one set of parents. It was old school. But I guess there was some lady who looked like my mom from the back, so in front of a whole crowd of people I ran up and grabbed her legs and shouted 'I pooped all by myself!'"

“Oh.” Girl23 couldn’t help it—laughter broke out.

He kind of grinned, but then he ducked his eyes and studied her sludge-covered brush. “I found out why pineapple’s funny,” he said. “Do you want to know?”

“Duh.”

A hint of red crept up his neck. “Apparently the grown-ups turned it into slang for asking someone if they want to have sex, since it doesn’t exist. ‘Let’s go see if the cafeteria has pineapple.’”

“Oh,” she said. She didn’t want to embarrass him more, so she scrubbed some. Finally she said shyly, “So do you have a name, besides The Child?”

“Yeah. They wiped it from the recorded version to keep it more generic.” He kicked the wall. “It’s Nick. I dunno if I can get anyone to use it though. They just talk about me as ‘us’ all the time.”

“Nick,” she said.

“When I was little there were other kids around too. They mostly called me Bang.” He cocked a finger at her and mouthed the word. “But now . . .”

“It’s not so cool when everyone else does what you do,” she said. She felt clever for realizing that, and she wondered if there was something magical about being not-yet-adult that made them immediately understand what was cool and not, even when no one told you. “A

nickname,” said Girl23. “I want a nickname too. Something sharp and flashy, like Bang.” Heck, even Nick was sharp; better than Girl23. And then, shyly, “Will you give me one?”

He considered for a moment. “Yeah. I will. But I have to get to know you first.”

“I’ve never done anything particularly flashy,” she said. “Not like you and your hijinks. Not like the time in the antigrav chamber.”

“Why’d they pick me?” he burst out. “There were a dozen other chipped kids left by the time we made it to sixteen.”

“Because you were perfect,” she said, thinking of all the Girls who hadn’t made it, thinking of how hard she’d tried and tried.

“But I wasn’t.” He shook his head wildly. “They hang the embarrassing memories on me, and laugh and walk away, but they clutch at the good ones and take them from me.” He kicked one of the protruding ridges of tiled metal. “It was better before I was tanked. Everything was mine. I don’t want all my best memories to be theirs too.”

“And they always will be, if they keep recording you,” she said. It probably wasn’t the best thing to say, but it slipped out.

His fists tensed and suddenly he climbed up on the

tilled ridge that separated the part of the room she was cleaning from the undrained water on the other side, balancing on his wobbly calf legs. The ridge was rounded and slick with sludge that she hadn't gotten to yet. "I hate them all. Hangers on. They take from me. This is mine. This moment is mine." He walked on the high ridge above the tank, his arms spread wide.

She admired his balance and she thought of the broken arm. "You're not as clumsy as they say you are," she said.

He turned, irritated. "Can't you be the one person who doesn't bring up all my memories?" But turning around had off-balanced him. He tried to steady himself, but his toe caught a pipe, and then she saw him fall as if in slow motion, hanging for a moment in the air before he splashed into the tank.

She shouted and grabbed for him, but he was too far from the side, and she was too short to reach far enough over the ridge. Fresh out of the tank, he didn't have the muscles to swim. He was flailing and sinking. Girl23 ran to the panel by the door and pounded on the controls. Through a combination of vague memories from her safety courses and blind luck, she managed to drain the tank. The ship would probably have to ration water for a while, but she doubted anyone would hold it against her.

She helped him climb back over the ridge, watching the mixture of humiliation and anger on his face. He climbed out on shaky legs, spat water onto the floor, coughed, then coughed so forcefully his whole face reddened as he strained. Between gulps of air he said, “That’s mine. All mine.”

And she stared at him until he looked up at her, not knowing what to say, and then suddenly his expression changed, and he doubled over again gasping with laughter. “Mine,” he chortled, “All mine . . .”

She laughed and threw down her scrub brush. “C’mon,” she said. “I’m tired of being punished. I want to show you the ship.”

His face was still wet, still red, and his clothes were dripping. He moved toward her and she leaned back, unintentionally, unsure of his motives. But he just took the small towel she had been using to dry her hands and started running it over his skin and clothes. “I’ve seen most of it. It hasn’t changed too much, except where they’ve moved the walls around in 8G.”

“Oh.” Of course. Dumb. But no— “No, I want to show you the Hydroponics Bay,” she said. “I know the updates there are new because all the newborns come in and say ‘Holy cow, look at this.’ They don’t do that about other things.”

“Really . . . ?” he said, and his eyes lit up and she understood, because oh did she love the Bay. She grabbed his damp sleeve and dragged him down the corridor, down to her favorite spot on the ship. They ran past a group of coffee-clutching adults, who, chuckling, all said, “Do you remember when I . . .” and they tore down the corridor to the Hydroponics Bay and she banged on the plate to open the door and, laughing wildly, pulled him into the room.

Nick stopped and stared.

“It was never this grand before.” He moved in, reaching out to touch the plants gently, as though he was afraid they’d disappear from under his fingers. “It was never this full of green.”

And you care, she thought. You love the plants just like I do. And some of your love rubs off on everyone in the ship, and they all come in here and stare in awe. It’s not enough to make them stay for good, and as they reintegrate they find their love of astronomy or cooking or nursing. But first they all come, flush with your memories, and their jaws hang open in a small rush of wonder.

“Come see the genetics lab,” she said.

Nick followed her, touching leaves with tender fingers, the towel draped casually over his damp

shoulder. “Wait. Didn’t you have tomatoes?”

“The drain clogged and they got waterlogged,” she said. “I composted them and I have to start over. I haven’t messed up like that in ages.”

“Or they did it,” he said sagely. “You have to mess up, you know.”

Anger flared. “And they *would* be so stupid, wouldn’t they, to drown them and then accuse *me* of neglecting them!” She stomped to the back of the bay, where the lab was. It was nearing lunchtime and the room was empty. Just as well, she didn’t want to see Tessa and William—whom she liked—fawn over Nick. Nick was hers in some inexplicable way; they understood each other.

She wasn’t technically allowed to be in the lab on her own, but she didn’t care. She’d failed childhood by trying to be their perfect child. But here was Nick and he was brave, he was bold, and it was like she was standing on a tiled ledge above a tank of sludgy water when she said, “Let’s make a plant.”

He didn’t ask if they were allowed. He sat down in the chair next to her. They were alike and she was brave like him. They had to do things to get in trouble for. They had to make their own memories. They were the *doers*.

She called up the program that she had seen Tessa use. “What sort of plant should we make?”

He furrowed his brow, leaned back and crossed his arms. Then grinned and cocked a finger at her. Bang. “Something carnivorous.”

Her fingers flew as she showed him the program, showed him how they could combine the stored genetic information in the lab, run simulations on the computer before trying something in the reality of the incubation chamber. It was barely even a complete plant when he asked how they turned it from a computer simulation into an actual plant.

“In the chamber,” she said. Then, like stepping off an antigrav cliff, she asked, “Should I hit Create?”

He grinned. “Duh.”

She hit the button.

“Now we look through the window.” All they would see at this juncture was microscopic cells being combined, of course. But they looked in and saw nothing, not even moving servos. Girl23 studied the extra panel on the outside of the room. “Oh, I think I have to adjust this,” she said. She remembered Tessa talking about cranking the heat up and down, and there was some program she ran over here to tell it to make its own adjustments, and she thought that program was named BetaGrow, and when she typed it in the machine took it.

“Is it supposed to catch on fire like that?” said Nick.

She looked through the window with a sinking stomach and saw a column of flame.

“Oh, crap,” she said.

Which was, of course, when Tessa and William returned from lunch.

The scientists leaped into action to stop the blaze. The inside of the incubation chamber was black and charred and when they opened the door a wave of gray smoke billowed out and suffocated the room until it was sucked up into the upper air vent. William pulled on his hair and despaired of all their current and future projects as only a die-hard scientist could.

Before Girl23 could explain anything her Parents were there, along with the Psych doctor she usually talked to about homework, and then suddenly everyone important on the ship surrounded her.

They discussed her as if she were a plant, and suddenly there was consensus that this called for Sequence #999, and she *knew* what #999 was.

Girl23 didn't want to be wiped.

She wanted her own memories.

But the more hysterically she cried, the more disturbed they got—who was this entity that screamed and cried and threw a fit? Normal people didn't do those things, and somehow no one remembered the fit that The

Child had thrown when he was nine and found out that he wouldn't get to see planetfall in his lifetime.

The experiment had failed and her chip wasn't going to be used and suddenly she was in the Newborn wing, kicking and screaming, and they were dragging her to a tank, and Tessa's voice was reassuring her that she'd be back on her feet and in the lab before she knew it, but next time it would be better, oh so much better.

Red-haired Mother was nowhere to be seen—far away lest anyone connect her with this utter failure of a Girl, but Short Chubby Father was still at his post, looking distracted and saying “Oh, Daughter, this will be better in the long run.” Behind him was Snub-nosed Mother from long ago, the only Mother she had ever loved, railing at the powers that be— “What is so wrong with her that you have to do this? I thought you understood that not everyone comes in one-size-fits-all—” and the tubes and wires were arranged and her arm stuck up with needles and she was in the jelly and the lid was being closed. Way off in the distance she saw a man dragging Nick away, but their eyes met and she tried to call out “M-12 storage room!” but her lips were already numb and her fingers, toes, and throat, were falling away, failing her, dissolving into grainy colors, then silver, then white.

It was white for what seemed like days, until she thought she would lose it, and surely it had been white forever and would always be white.

Then she saw the face of a boy in a silvered mirror, and she was that boy, banging with a rattle. No, no, remember, remember, *he* was, and where was his one and only mother . . . ? But the boy returned, insistent.

Surely she had always been the boy . . .

It was the soundest sleep he had ever had. He woke to a white room with a soothing picture of a train rumbling across green hills. He knew it was a train, though he had never seen a train or hills, and he had certainly never seen that picture. He tried to move, but his muscles were weak, too weak to pull him upright. Had he clumsily hurt himself in the Zero Grav again? He'd been so much more cautious after the broken arm . . .

A nurse appeared at his bedside, followed by a doctor, and the doctor he suddenly did remember, though it seemed like it was in a dream. "Felicia Anderson," said the doctor. "Your name is Felicia Anderson."

He shook his head. "That's a girl's name . . ."

The doctor was flashing a penlight in his eyes. "Check your memory. You'll find that as a female you received the standard memory adjustment package. You

should have memories of spending three months in Psych getting used to being female and making a smooth transition. There is always a little adjustment left at this stage, but we expect it to be minimal.”

“I remember . . .” she said. Now that the doctor said it, she remembered these new memories of waking up for healthy Psych adjustment, and behind that all the normal childhood stuff, like the broken arm. But behind that—something else? “I was a girl . . .”

The doctor and nurse were stiff, watching her warily. “You *are* a girl,” he said. “Rather, a woman. You are Felicia Anderson and you are to spend time today with PT and in Psych. You’ll be on your feet before you know it.”

Felicia put a tentative foot over the side of the bed, then the other. Sitting up made her feel woozy, as the blood rushed around to strange places. Everything felt so weak . . .

She slid to the floor, trying to stand; balanced on wobbly ankles and knees for a few seconds. The doctor and nurse caught her before she could collapse to the floor. Eased her back into the bed.

“Just practice moving your limbs before you try to go anywhere,” the doctor said. “Cruz, stay with her.”

It was so strange. Standing, she felt attacked by two sets of memories. One told her she was too short, too

female. Her balance was wrong. The other told her she certainly *was* a girl, but she was too tall, too heavy in the wrong places. She seized at those memories. They kept slipping away from her, though at the same time there was a vividness, an honesty to them. She was a girl, a very special girl, a girl who had a purpose and who never did anything wrong . . .

“I killed my plants!” Felicia said suddenly. The nurse looked relieved. “Yes,” he said. “You killed your plants. You forgot to add nutrients and they died. But you learned responsibility.”

Felicia remembered a row of yellow moldy plants, waterlogged and dead. But she looked at the nurse’s relieved face and didn’t say anything about that. “I learned frustration,” she said. She had been angry, and there was sabotage . . .

“Yes, very frustrating,” the nurse agreed. He had Felicia extend her fingers, move her arms. “It’s one of The Child’s key memories. We learn a lot from it.”

The Child. Yes. But she had two sets of memories and both sets told her that people usually only had one. The earlier memory, the crushed memory that she could feel in her muscles, in her bones—that memory told her that most people’s memory was of The Child.

She replayed those vivid moments that seemed most

recent. Plants dying. A corridor. Preparing to take out her chip. But why had she done that? She backed up. The chip, the corridor, the plants. The Child waking up.

The Child. A tall boy whom she felt a kinship with in both sets of memories, as though she understood him and he understood her. Maybe everyone felt that way, but something in the back of her mind repeated: Go see The Child.

All trails ended with him.

She found him at last in the Hydroponics Bay. She should've looked there first, because he was standing at the back, his hands stuffed in his pockets, looking sideways up at her. She remembered now in her bones that that meant he was nervous, and she also remembered a time when she didn't know that, though she couldn't remember any more of that memory.

He was tall, as tall as she remembered being herself, in those memories were she was him and she broke her arm and killed her tomato plants and ran giddily through corridor B-35 with a length of blue cord for a tail, knocking grownups down. She smiled ruefully at that memory, just as the grownups did. And suddenly she remembered she was a grownup, but she was still looking at him, and looking at the globe he held in his hands.

“It’s for you,” he said. “It’s for you, Flash.”

“They told me Felicia,” she said, and she took a step towards him.

“You told me once you wanted a nickname. And when you set the lab on fire, it just sort of came to me. Flash. I think it’ll suit you.”

She paused, trying to remember the fire. Instead, she remembered something else. “Your chip.”

“Gone,” he said. “I convinced Psych to record a more modern adulthood, that mine was too outdated. The future won’t see us.”

He was smiling, and she pressed her fingertips to the cool surface of the globe, collecting his offering with shaky hands.

The globe contained a tiny plant, smaller than her hand. It balanced on a miniature column, its roots threaded into chutes for food and water. It was blue and coiled and had a bud-like head with a fringe of white. She reached in through the top of the globe. The plant writhed and snapped.

“It bites?” she said, even as she reached for it.

“Only strangers,” he said. “It knows me; it should know you too, even though it hasn’t met you . . .”

She put one cautious fingertip to the tip of the bud, and the flower pressed itself against her skin in an

evergreen kiss. “Even though it hasn’t met me,” she echoed, and the breath of her awe stirred the white fringe.

“It remembers you,” he said, and he held the globe as the plant purred and nuzzled her hand. His eyes were kind and mischievous and as blue as the bud. “I let it smell your chip. It remembers *you*, Flash.”

His eyes were her own, and yet not her own, and Flash knew she was entirely ready to find out exactly what that difference meant.

She cocked a finger at him. “Bang,” she said.

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Slow Life

Michael Swanwick

“It was the Second Age of Space. Gagarin, Shepard, Glenn, and Armstrong were all dead. It was *our* turn to make history now.” —*The Memoirs of Lizzie O’Brien*

The raindrop began forming ninety kilometers above the surface of Titan. It started with an infinitesimal speck of tholin, adrift in the cold nitrogen atmosphere.

Dianoacetylene condensed on the seed nucleus, molecule by molecule, until it was one shard of ice in a cloud of billions.

Now the journey could begin.

It took almost a year for the shard of ice in question to precipitate downward twenty-five kilometers, where the temperature dropped low enough that ethane began to condense on it. But when it did, growth was rapid.

Down it drifted.

At forty kilometers, it was for a time caught up in an ethane cloud. There it continued to grow. Occasionally it collided with another droplet and doubled in size. Finally, it was too large to be held effortlessly aloft by the gentle stratospheric winds.

It fell.

Falling, it swept up methane and quickly grew large enough to achieve a terminal velocity of almost two meters per second.

At twenty-seven kilometers, it passed through a dense layer of methane clouds. It acquired more methane, and continued its downward flight.

As the air thickened, its velocity slowed and it began to lose some of its substance to evaporation. At two and a half kilometers, when it emerged from the last patchy clouds, it was losing mass so rapidly it could not normally be expected to reach the ground.

It was, however, falling toward the equatorial highlands, where mountains of ice rose a towering five hundred meters into the atmosphere. At two meters and a lazy new terminal velocity of one meter per second, it was only a breath away from hitting the surface.

Two hands swooped an open plastic collecting bag upward, and snared the raindrop.

“Gotcha!” Lizzie O’Brien cried gleefully.

She zip-locked the bag shut, held it up so her helmet cam could read the bar-code in the corner, and said, “One raindrop.” Then she popped it into her collecting box.

Sometimes it’s the little things that make you happiest. Somebody would spend a *year* studying this

one little raindrop when Lizzie got it home. And it was just Bag 64 in Collecting Case 5. She was going to be on the surface of Titan long enough to scoop up the raw material of a revolution in planetary science. The thought of it filled her with joy.

Lizzie dogged down the lid of the collecting box and began to skip across the granite-hard ice, splashing the puddles and dragging the boot of her atmosphere suit through the rivulets of methane pouring down the mountainside. "*I'm sing-ing in the rain.*" She threw out her arms and spun around. "*Just sing-ing in the rain!*"

"Uh . . . O'Brien?" Alan Greene said from the *Clement*. "Are you all right?"

"*Dum-dee-dum-dee-dee-dum-dum, I'm . . . something again.*"

"Oh, leave her alone." Consuelo Hong said with sour good humor. She was down on the plains, where the methane simply boiled into the air, and the ground was covered with thick, gooey tholin. It was, she had told them, like wading ankle-deep in molasses. "Can't you recognize the scientific method when you hear it?"

"If you say so," Alan said dubiously. He was stuck in the *Clement*, overseeing the expedition and minding the website. It was a comfortable gig—*he* wouldn't be sleeping in his suit *or* surviving on recycled water and

energy stix—and he didn't think the others knew how much he hated it.

“What's next on the schedule?” Lizzie asked.

“Um . . . well, there's still the robot turbot to be released. How's that going, Hong?”

“Making good time. I oughta reach the sea in a couple of hours.”

“Okay, then it's time O'Brien rejoined you at the lander. O'Brien, start spreading out the balloon and going over the harness checklist.”

“Roger that.”

“And while you're doing that, I've got today's voice-posts from the Web cued up.”

Lizzie groaned, and Consuelo blew a raspberry. By NAFTAASA policy, the ground crew participated in all webcasts. Officially, they were delighted to share their experiences with the public. But the VoiceWeb (privately, Lizzie thought of it as the Illiternet) made them accessible to people who lacked even the minimal intellectual skills needed to handle a keyboard.

“Let me remind you that we're on open circuit here, so anything you say will go into my reply. You're certainly welcome to chime in at any time. But each question-and-response is transmitted as one take, so if you flub a line, we'll have to go back to the beginning

and start all over again.”

“Yeah, yeah,” Consuelo grumbled.

“We’ve done this before,” Lizzie reminded him.

“Okay. Here’s the first one.”

“Uh, hi, this is BladeNinja43. I was wondering just what it is that you guys are hoping to discover out there.”

“That’s an extremely good question,” Alan lied. “And the answer is: We don’t know! This is a voyage of discovery, and we’re engaged in what’s called ‘pure science.’ Now, time and time again, the purest research has turned out to be extremely profitable. But we’re not looking that far ahead. We’re just hoping to find something absolutely unexpected.”

“My God, you’re slick,” Lizzie marveled.

“I’m going to edit that from the tape,” Alan said cheerily. “Next up.”

“This is Mary Schroeder, from the United States. I teach high school English, and I wanted to know for my students, what kind of grades the three of you had when you were their age.”

Alan began. “I was an overachiever, I’m afraid. In my sophomore year, first semester, I got a B in Chemistry and panicked. I thought it was the end of the world. But then I dropped a couple of extracurriculars, knuckled

down, and brought that grade right up.”

“I was good in everything but French Lit,” Consuelo said.

“I nearly flunked out!” Lizzie said. “Everything was difficult for me. But then I decided I wanted to be an astronaut, and it all clicked into place. I realized that, hey, it’s just hard work. And now, well, here I am.”

“That’s good. Thanks, guys. Here’s the third, from Maria Vasquez.”

“Is there life on Titan?”

“Probably not. It’s *cold* down there! 94° Kelvin is the same as -179° Celsius, or -290° Fahrenheit. And yet . . . life is persistent. It’s been found in Antarctic ice and in boiling water in submarine volcanic vents. Which is why we’ll be paying particular attention to exploring the depths of the ethane-methane sea. If life is anywhere to be found, that’s where we’ll find it.”

“Chemically, the conditions here resemble the anoxic atmosphere on Earth in which life first arose,” Consuelo said. “Further, we believe that such prebiotic chemistry has been going on here for four and a half billion years. For an organic chemist like me, it’s the best toy box in the Universe. But that lack of heat is a problem. Chemical reactions that occur quickly back home would take thousands of years here. It’s hard to see how life could

arise under such a handicap.”

“It would have to be slow life,” Lizzie said thoughtfully. “Something vegetative. ‘Vaster than empires, and more slow.’ It would take millions of years to reach maturity. A single thought might require centuries . . .”

“Thank you for that, uh, wild scenario!” Alan said quickly. Their NAFTAASA masters frowned on speculation. It was, in their estimation, almost as unprofessional as heroism. “This next question comes from Danny in Toronto.”

“Hey, man, I gotta say I really envy you being in that tiny little ship with those two hot babes.”

Alan laughed lightly. “Yes, Ms. Hong and Ms. O’Brien are certainly attractive women. But we’re kept so busy that, believe it or not, the thought of sex never comes up. And currently, while I tend to the *Clement*, they’re both on the surface of Titan at the bottom of an atmosphere 60 percent more dense than Earth’s, and encased in armored exploration suits. So even if I did have inappropriate thoughts, there’s no way we could—”

“Hey, Alan,” Lizzie said. “Tell me something.”

“Yes?”

“What are you wearing?”

“Uh . . . switching over to private channel.”

“Make that a three-way,” Consuelo said.

Ballooning, Lizzie decided, was the best way there was of getting around. Moving with the gentle winds, there was no sound at all. And the view was great!

People talked a lot about the “murky orange atmosphere” of Titan, but your eyes adjusted. Turn up the gain on your helmet, and the white mountains of ice were *dazzling!* The methane streams carved cryptic runes into the heights. Then, at the tholin-line, white turned to a rich palette of oranges, reds, and yellows. There was a lot going on down there—more than she’d be able to learn in a hundred visits.

The plains were superficially duller, but they had their charms as well. Sure, the atmosphere was so dense that refracted light made the horizon curve upward to either side. But you got used to it. The black swirls and cryptic red tracery of unknown processes on the land below never grew tiring.

On the horizon, she saw the dark arm of Titan’s narrow sea. If that was what it was. Lake Erie was larger, but the spin doctors back home had argued that since Titan was so much smaller than Earth, *relatively* it qualified as a sea. Lizzie had her own opinion, but she knew when to keep her mouth shut.

Consuelo was there now. Lizzie switched her visor over to the live feed. Time to catch the show.

“I can’t believe I’m finally here,” Consuelo said. She let the shrink-wrapped fish slide from her shoulder down to the ground. “Five kilometers doesn’t seem like very far when you’re coming down from orbit—just enough to leave a margin for error so the lander doesn’t come down in the sea. But when you have to *walk* that distance, through tarry, sticky tholin . . . well, it’s one heck of a slog.”

“Consuelo, can you tell us what it’s like there?” Alan asked.

“I’m crossing the beach. Now I’m at the edge of the sea.” She knelt, dipped a hand into it. “It’s got the consistency of a Slushy. Are you familiar with that drink? Lots of shaved ice sort of half-melted in a cup with flavored syrup. What we’ve got here is almost certainly a methane-ammonia mix; we’ll know for sure after we get a sample to a laboratory. Here’s an early indicator, though. It’s dissolving the tholin off my glove.” She stood.

“Can you describe the beach?”

“Yeah. It’s white. Granular. I can kick it with my boot. Ice sand for sure. Do you want me to collect samples first or release the fish?”

“Release the fish,” Lizzie said, almost simultaneously

with Alan's "Your call."

"Okay, then." Consuelo carefully cleaned both of her suit's gloves in the sea, then seized the shrink-wrap's zip tab and yanked. The plastic parted. Awkwardly, she straddled the fish, lifted it by the two side-handles, and walked it into the dark slush.

"Okay, I'm standing in the sea now. It's up to my ankles. Now it's at my knees. I think it's deep enough here."

She set the fish down. "Now I'm turning it on."

The Mitsubishi turbot wriggled, as if alive. With one fluid motion, it surged forward, plunged, and was gone.

Lizzie switched over to the fishcam.

Black liquid flashed past the turbot's infrared eyes. Straight away from the shore it swam, seeing nothing but flecks of paraffin, ice, and other suspended particulates as they loomed up before it and were swept away in the violence of its wake. A hundred meters out, it bounced a pulse of radar off the sea floor, then dove, seeking the depths.

Rocking gently in her balloon harness, Lizzie yawned.

Snazzy Japanese cybernetics took in a minute sample of the ammonia-water, fed it through a deftly constructed internal laboratory, and excreted the waste products behind it. "We're at twenty meters now," Consuelo said.

“Time to collect a second sample.”

The turbot was equipped to run hundreds of on-the-spot analyses. But it had only enough space for twenty permanent samples to be carried back home. The first sample had been nibbled from the surface slush. Now it twisted, and gulped down five drams of sea fluid in all its glorious impurity. To Lizzie, this was science on the hoof. Not very dramatic, admittedly, but intensely exciting.

She yawned again.

“O’Brien?” Alan said, “How long has it been since you last slept?”

“Huh? Oh . . . twenty hours? Don’t worry about me, I’m fine.”

“Go to sleep. That’s an order.”

“But—”

“Now.”

Fortunately, the suit was comfortable enough to sleep in. It had been designed so she could.

First, she drew in her arms from the suit’s sleeves. Then she brought in her legs, tucked them up under her chin, and wrapped her arms around them. “Night, guys,” she said.

“*Buenas noches, querida,*” Consuelo said, “*que tengas lindos sueños.*”

“Sleep tight, space explorer.”

The darkness when she closed her eyes was so absolute it crawled. Black, black, black. Phantom lights moved within the darkness, formed lines, shifted away when she tried to see them. They were as fugitive as fish, luminescent, fainter than faint, there and with a flick of her attention fled. A school of little thoughts flashed through her mind, silver-scaled and gone.

Low, deep, slower than sound, something tolled. The bell from a drowned clock tower patiently stroking midnight. She was beginning to get her bearings. Down *there* was where the ground must be. Flowers grew there unseen. Up above was where the sky would be, if there were a sky. Flowers floated there as well.

Deep within the submerged city, she found herself overcome by an enormous and placid sense of self. A swarm of unfamiliar sensations washed through her mind, and then . . .

“Are you me?” a gentle voice asked.

“No,” she said carefully. “I don’t think so.”

Vast astonishment. “You think you are not me?”

“Yes. I think so, anyway.”

“Why?”

There didn’t seem to be any proper response to that, so she went back to the beginning of the conversation and ran through it again, trying to bring it to another

conclusion. Only to bump against that “Why?” once again.

“I don’t know why,” she said.

“Why not?”

“I don’t know.”

She looped through that same dream over and over again all the while that she slept.

When she awoke, it was raining again. This time, it was a drizzle of pure methane from the lower cloud deck at fifteen kilometers. These clouds were (the theory went) methane condensate from the wet air swept up from the sea. They fell on the mountains and washed them clean of tholin. It was the methane that eroded and shaped the ice, carving gullies and caves.

Titan had more kinds of rain than anywhere else in the Solar System.

The sea had crept closer while Lizzie slept. It now curled up to the horizon on either side like an enormous dark smile. Almost time now for her to begin her descent. While she checked her harness settings, she flicked on telemetry to see what the others were up to.

The robot turbot was still spiraling its way downward, through the lightless sea, seeking its distant floor. Consuelo was trudging through the tholin again, retracing her five-kilometer trek from the lander *Harry Stubbs*, and

Alan was answering another set of webposts.

“Modelos de la evolución de Titanes indican que la luna formó de una nube circumplanetaria rica en amoníaco y metano, la cual al condensarse dio forma a Saturno así como a otros satélites. Bajo estas condiciones en—”

“Uh . . . guys?”

Alan stopped. “Damn it, O’Brien, now I’ve got to start all over again.”

“Welcome back to the land of the living,” Consuelo said. “You should check out the readings we’re getting from the robofish. Lots of long-chain polymers, odd fractions . . . tons of interesting stuff.”

“Guys?”

This time her tone of voice registered with Alan. “What is it, O’Brien?”

“I think my harness is jammed.”

Lizzie had never dreamed disaster could be such drudgery. First there were hours of back-and-forth with the NAFTASA engineers. What’s the status of rope 14? Try tugging on rope 8. What do the D-rings look like? It was slow work because of the lag time for messages to be relayed to Earth and back. And Alan insisted on filling the silence with posts from the VoiceWeb. Her plight had gone global in minutes, and every unemployable loser on

the planet had to log in with suggestions.

“Thezgemoth337, here. It seems to me that if you had a gun and shot up through the balloon, it would maybe deflate and then you could get down.”

“I don’t have a gun, shooting a hole in the balloon would cause it not to deflate but to rupture, I’m 800 hundred meters above the surface, there’s a sea below me, and I’m in a suit that’s not equipped for swimming. Next.”

“If you had a really big knife—”

“Cut! Jesus, Greene, is this the best you can find? Have you heard back from the organic chem guys yet?”

“Their preliminary analysis just came in,” Alan said. “As best they can guess—and I’m cutting through a lot of clutter here—the rain you went through wasn’t pure methane.”

“No shit, Sherlock.”

“They’re assuming that whitish deposit you found on the rings and ropes is your culprit. They can’t agree on what it is, but they think it underwent a chemical reaction with the material of your balloon and sealed the rip panel shut.”

“I thought this was supposed to be a pretty nonreactive environment.”

“It is. But your balloon runs off your suit’s waste heat.

The air in it is several degrees above the melting-point of ice. That's the equivalent of a blast furnace, here on Titan. Enough energy to run any number of amazing reactions. You haven't stopped tugging on the vent rope?"

"I'm tugging away right now. When one arm gets sore, I switch arms."

"Good girl. I know how tired you must be."

"Take a break from the voice-posts," Consuelo suggested, "and check out the results we're getting from the robofish. It's giving us some really interesting stuff."

So she did. And for a time it distracted her, just as they'd hoped. There was a lot more ethane and propane than their models had predicted, and surprisingly less methane. The mix of fractions was nothing like what she'd expected. She had learned just enough chemistry to guess at some of the implications of the data being generated, but not enough to put it all together. Still tugging at the ropes in the sequence uploaded by the engineers in Toronto, she scrolled up the chart of hydrocarbons dissolved in the lake.

Solute / Solute mole fraction

Ethyne / 4.0×10^{-4}

Propyne / 4.4×10^{-5}

1,3-Butadiyne / 7.7×10^{-7}

Carbon Dioxide / 0.1×10^{-5}

Methanenitrile / 5.7×10^{-6}

But after a while, the experience of working hard and getting nowhere, combined with the tedium of floating farther and farther out over the featureless sea, began to drag on her. The columns of figures grew meaningless, then indistinct.

Propanenitrile / 6.0×10^{-5}

Propenenitrile / 9.9×10^{-6}

Propynenitrile / 5.3×10^{-6}

Hardly noticing she was doing so, she fell asleep.

She was in a lightless building, climbing flight after flight of stairs. There were other people with her, also climbing. They jostled against her as she ran up the stairs, flowing upward, passing her, not talking.

It was getting colder.

She had a distant memory of being in the furnace room down below. It was hot there, swelteringly so. Much cooler where she was now. Almost too cool. With every step she took, it got a little cooler still. She found herself slowing down. Now it was definitely too cold. Unpleasantly so. Her leg muscles ached. The air seemed

to be thickening around her as well. She could barely move now.

This was, she realized, the natural consequence of moving away from the furnace. The higher up she got, the less heat there was to be had, and the less energy to be turned into motion. It all made perfect sense to her somehow.

Step. Pause.

Step. Longer pause.

Stop.

The people around her had slowed to a stop as well. A breeze colder than ice touched her, and without surprise, she knew that they had reached the top of the stairs and were standing upon the building's roof. It was as dark without as it had been within. She stared upward and saw nothing.

“Horizons. Absolutely baffling,” somebody murmured beside her.

“Not once you get used to them,” she replied.

“Up and down—are these hierarchic values?”

“They don't have to be.”

“Motion. What a delightful concept.”

“We like it.”

“So you *are* me?”

“No. I mean, I don't think so.”

“Why?”

She was struggling to find an answer to this, when somebody gasped. High up in the starless, featureless sky, a light bloomed. The crowd around her rustled with unspoken fear. Brighter, the light grew. Brighter still. She could feel heat radiating from it, slight but definite, like the rumor of a distant sun. Everyone about her was frozen with horror. More terrifying than a light where none was possible was the presence of heat. It simply could not be. And yet it was.

She, along with the others, waited and watched for . . . something. She could not say what. The light shifted slowly in the sky. It was small, intense, ugly.

Then the light *screamed*.

She woke up.

“Wow,” she said. “I just had the weirdest dream.”

“Did you?” Alan said casually.

“Yeah. There was this light in the sky. It was like a nuclear bomb or something. I mean, it didn’t look anything like a nuclear bomb, but it was terrifying the way a nuclear bomb would be. Everybody was staring at it. We couldn’t move. And then . . .” She shook her head. “I lost it. I’m sorry. It was so just so strange. I can’t put it into words.”

“Never mind that,” Consuelo said cheerily. “We’re

getting some great readings down below the surface. Fractional polymers, long-chain hydrocarbons . . . fabulous stuff. You really should try to stay awake to catch some of this.”

She was fully awake now, and not feeling too happy about it. “I guess that means that nobody’s come up with any good ideas yet on how I might get down.”

“Uh . . . what do you mean?”

“Because if they had, you wouldn’t be so goddamned upbeat, would you?”

“*Somebody* woke up on the wrong side of the bed,” Alan said. “Please remember that there are certain words we don’t use in public.”

“I’m sorry,” Consuelo said. “I was just trying to—”

“—distract me. Okay, fine. What the hey. I can play along.” Lizzie pulled herself together. “So your findings mean . . . what? Life?”

“I keep telling you guys. It’s too early to make that kind of determination. What we’ve got so far are just some very, very interesting readings.”

“Tell her the big news,” Alan said.

“Brace yourself. We’ve got a real ocean! Not this tiny little two-hundred-by-fifty-miles glorified lake we’ve been calling a sea, but a genuine ocean! Sonar readings show that what we see is just an evaporation pan atop a thirty-

kilometer-thick cap of ice. The real ocean lies underneath, two hundred kilometers deep.”

“Jesus.” Lizzie caught herself. “I mean, gee whiz. Is there any way of getting the robofish down into it?”

“How do you think we got the depth readings? It’s headed down there right now. There’s a chimney through the ice right at the center of the visible sea. That’s what replenishes the surface liquid. And directly under the hole, there’s—guess what?—volcanic vents!”

“So does that mean. . . ?”

“If you use the L-word again,” Consuelo said, “I’ll spit.”

Lizzie grinned. *That* was the Consuelo Hong she knew. “What about the tidal data? I thought the lack of orbital perturbation ruled out a significant ocean entirely.”

“Well, Toronto thinks”

At first, Lizzie was able to follow the reasoning of the planetary geologists back in Toronto. Then it got harder. Then it became a drone. As she drifted off into sleep, she had time enough to be peevishly aware that she really shouldn’t be dropping off to sleep all the time like this. She oughtn’t be so tired. She . . .

She found herself in the drowned city again. She still couldn’t see anything, but she knew it was a city because she could hear the sound of rioters smashing store

windows. Their voices swelled into howling screams and receded into angry mutters, like a violent surf washing through the streets. She began to edge away backwards.

Somebody spoke into her ear.

“Why did you do this to us?”

“I didn’t do anything to you.”

“You brought us knowledge.”

“What knowledge?”

“You said you were not us.”

“Well, I’m not.”

“You should never have told us that.”

“You wanted me to lie?”

Horrified confusion. “Falsehood. What a distressing idea.”

The smashing noises were getting louder. Somebody was splintering a door with an axe. Explosions. Breaking glass. She heard wild laughter. Shrieks. “We’ve got to get out of here.”

“Why did you send the messenger?”

“What messenger?”

“The star! The star! The star!”

“Which star?”

“There are two stars?”

“There are billions of stars.”

“No more! Please! Stop! No more!”

She was awake.

“Hello, yes, I appreciate that the young lady is in extreme danger, but I really don’t think she should have used the Lord’s name in vain.”

“Greene,” Lizzie said, “do we really have to put up with this?”

“Well, considering how many billions of public-sector dollars it took to bring us here . . . yes. Yes, we do. I can even think of a few backup astronauts who would say that a little upbeat web-posting was a pretty small price to pay for the privilege.”

“Oh, barf.”

“I’m switching to a private channel,” Alan said calmly. The background radiation changed subtly. A faint, granular crackling that faded away when she tried to focus on it. In a controlled, angry voice Alan said, “O’Brien, just what the hell is going on with you?”

“Look, I’m sorry, I apologize, I’m a little excited about something. How long was I out? Where’s Consuelo? I’m going to say the L-word. And the I-word as well. We have life. Intelligent life!”

“It’s been a few hours. Consuelo is sleeping. O’Brien, I hate to say this, but you’re not sounding at all rational.”

“There’s a perfectly logical reason for that. Okay, it’s a little strange, and maybe it won’t sound perfectly logical

to you initially, but . . . look, I've been having sequential dreams. I think they're significant. Let me tell you about them."

And she did so. At length.

When she was done, there was a long silence. Finally, Alan said, "Lizzie, think. Why would something like that communicate to you in your dreams? Does that make any sense?"

"I think it's the only way it can. I think it's how it communicates among itself. It doesn't move—motion is an alien and delightful concept to it—and it wasn't aware that its component parts were capable of individualization. That sounds like some kind of broadcast thought to me. Like some kind of wireless distributed network."

"You know the medical kit in your suit? I want you to open it up. Feel around for the bottle that's braille-coded twenty-seven, okay?"

"Alan, I do *not* need an antipsychotic!"

"I'm not saying you need it. But wouldn't you be happier knowing you had it in you?" This was Alan at his smoothest. Butter wouldn't melt in his mouth. "Don't you think that would help us accept what you're saying?"

"Oh, all right!" She drew in an arm from the suit's arm, felt around for the med kit, and drew out a pill,

taking every step by the regs, checking the coding four times before she put it in her mouth and once more (each pill was individually braille-coded as well) before she swallowed it. “Now will you listen to me? I’m quite serious about this.” She yawned. “I really do think that . . .” She yawned again. “That . . .

“Oh, piffle.”

Once more into the breach, dear friends, she thought, and plunged deep, deep into the sea of darkness. This time, though, she felt she had a handle on it. The city was drowned because it existed at the bottom of a lightless ocean. It was alive, and it fed off of volcanic heat. That was why it considered up and down hierarchic values. Up was colder, slower, less alive. Down was hotter, faster, more filled with thought. The city/entity was a collective life-form, like a Portuguese man-of-war or a massively hyperlinked expert network. It communicated within itself by some form of electromagnetism. Call it mental radio. It communicated with her that same way.

“I think I understand you now.”

“Don’t understand—run!”

Somebody impatiently seized her elbow and hurried her along. Faster she went, and faster. She couldn’t see a thing. It was like running down a lightless tunnel a hundred miles underground at midnight. Glass crunched

underfoot. The ground was uneven and sometimes she stumbled. Whenever she did, her unseen companion yanked her up again.

“Why are you so slow?”

“I didn’t know I was.”

“Believe me, you are.”

“Why are we running?”

“We are being pursued.” They turned suddenly, into a side passage, and were jolting over rubble ground. Sirens wailed. Things collapsed. Mobs surged.

“Well, you’ve certainly got the motion thing down pat.”

Impatiently. “It’s only a metaphor. You don’t think this is a *real* city, do you? Why are you so dim? Why are you so difficult to communicate with? Why are you so slow?”

“I didn’t know I was.”

Vast irony. “Believe me, you are.”

“What can I do?”

“Run!”

Whooping and laughter. At first, Lizzie confused it with the sounds of mad destruction in her dream. Then she recognized the voices as belonging to Alan and Consuelo. “How long was I out?” she asked.

“You were out?”

“No more than a minute or two,” Alan said. “It’s not important. Check out the visual the robofish just gave us.”

Consuelo squirted the image to Lizzie.

Lizzie gasped. “Oh! Oh, my.”

It was beautiful. Beautiful in the way that the great European cathedrals were, and yet at the same time undeniably organic. The structure was tall and slender, and fluted and buttressed and absolutely ravishing. It had grown about a volcanic vent, with openings near the bottom to let sea water in, and then followed the rising heat upward. Occasional channels led outward and then looped back into the main body again. It loomed higher than seemed possible (but it *was* underwater, of course, and on a low-gravity world at that), a complexly layered congeries of tubes like church-organ pipes, or deep-sea worms lovingly intertwined.

It had the elegance of design that only a living organism could have.

“Okay,” Lizzie said. “Consuelo. You’ve got to admit that—”

“I’ll go as far as ‘complex prebiotic chemistry.’ Anything more than that is going to have to wait for more definite readings.” Cautious as her words were, Consuelo’s voice rang with triumph. It said, clearer than

words, that she could happily die then and there, a satisfied xenochemist.

Alan, almost equally elated, said, “Watch what happens when we intensify the image.”

The structure shifted from gray to a muted rainbow of pastels, rose bleeding into coral, sunrise yellow into winter-ice blue. It was breathtaking.

“Wow.” For an instant, even her own death seemed unimportant. Relatively unimportant, anyway.

So thinking, she cycled back again into sleep. And fell down into the darkness, into the noisy clamor of her mind.

It was hellish. The city was gone, replaced by a matrix of noise: hammerings, clatterings, sudden crashes. She started forward and walked into an upright steel pipe. Staggering back, she stumbled into another. An engine started up somewhere nearby, and gigantic gears meshed noisily, grinding something that gave off a metal shriek. The floor shook underfoot. Lizzie decided it was wisest to stay put.

A familiar presence, permeated with despair. “Why did you do this to me?”

“What have I done?”

“I used to be everything.”

Something nearby began pounding like a pile-driver.

It was giving her a headache. She had to shout to be heard over its din. “You’re still something!”

Quietly. “I’m nothing.”

“That’s . . . not true! You’re . . . here! You exist! That’s . . . something!”

A world-encompassing sadness. “False comfort. What a pointless thing to offer.”

She was conscious again.

Consuelo was saying something. “. . . isn’t going to like it.”

“The spiritual wellness professionals back home all agree that this is the best possible course of action for her.”

“Oh, please!”

Alan had to be the most anal-retentive person Lizzie knew. Consuelo was definitely the most phlegmatic. Things had to be running pretty tense for both of them to be bickering like this. “Um . . . guys?” Lizzie said. “I’m awake.”

There was a moment’s silence, not unlike those her parents had shared when she was little and she’d wandered into one of their arguments. Then Consuelo said, a little too brightly, “Hey, it’s good to have you back,” and Alan said, “NAFTASA wants you to speak with someone. Hold on. I’ve got a recording of her first

transmission cued up and ready for you.”

A woman’s voice came online. *“This is Dr. Alma Rosenblum. Elizabeth, I’d like to talk with you about how you’re feeling. I appreciate that the time delay between Earth and Titan is going to make our conversation a little awkward at first, but I’m confident that the two of us can work through it.”*

“What kind of crap is this?” Lizzie said angrily.

“Who is this woman?”

“NAFTASA thought it would help if you—”

“She’s a grief counselor, isn’t she?”

“Technically, she’s a transition therapist.” Alan said.

“Look, I don’t buy into any of that touchy-feely Newage”—she deliberately mispronounced the word to rhyme with sewage—”stuff. Anyway, what’s the hurry? You guys haven’t given up on me, have you?”

“Uh . . .”

“You’ve been asleep for hours,” Consuelo said.

“We’ve done a little weather modeling in your absence. Maybe we should share it with you.”

She squirted the info to Lizzie’s suit, and Lizzie scrolled it up on her visor. A primitive simulation showed the evaporation lake beneath her with an overlay of liquid temperatures. It was only a few degrees warmer than the air above it, but that was enough to create a massive

updraft from the lake's center. An overlay of tiny blue arrows showed the direction of local microcurrents of air coming together to form a spiraling shaft that rose over two kilometers above the surface before breaking and spilling westward.

A new overlay put a small blinking light 800 meters above the lake surface. That represented her. Tiny red arrows showed her projected drift.

According to this, she would go around and around in a circle over the lake for approximately forever. Her ballooning rig wasn't designed to go high enough for the winds to blow her back over the land. Her suit wasn't designed to float. Even if she managed to bring herself down for a gentle landing, once she hit the lake she was going to sink like a stone. She wouldn't drown. But she wouldn't make it to shore either.

Which meant that she was going to die.

Involuntarily, tears welled up in Lizzie's eyes. She tried to blink them away, as angry at the humiliation of crying at a time like this as she was at the stupidity of her death itself. "Damn it, don't let me die like *this!* Not from my own incompetence, for pity's sake!"

"Nobody's said anything about incompetence," Alan began soothingly.

In that instant, the follow-up message from Dr. Alma

Rosenblum arrived from Earth. *"Yes, I'm a grief counselor, Elizabeth. You're facing an emotionally significant milestone in your life, and it's important that you understand and embrace it. That's my job. To help you comprehend the significance and necessity and—yes—even the beauty of death."*

"Private channel please!" Lizzie took several deep cleansing breaths to calm herself. Then, more reasonably, she said, "Alan, I'm a *Catholic*, okay? If I'm going to die, I don't want a grief counselor, I want a goddamned priest." Abruptly, she yawned. "Oh, fuck. Not again." She yawned twice more. "A priest, understand? Wake me up when he's online."

Then she again was standing at the bottom of her mind, in the blank expanse of where the drowned city had been. Though she could see nothing, she felt certain that she stood at the center of a vast, featureless plain, one so large she could walk across it forever and never arrive anywhere. She sensed that she was in the aftermath of a great struggle. Or maybe it was just a lull.

A great, tense silence surrounded her.

"Hello?" she said. The word echoed soundlessly, absence upon absence.

At last that gentle voice said, "You seem different."

"I'm going to die," Lizzie said. "Knowing that

changes a person.” The ground was covered with soft ash, as if from an enormous conflagration. She didn’t want to think about what it was that had burned. The smell of it filled her nostrils.

“Death. We understand this concept.”

“Do you?”

“We have understood it for a long time.”

“Have you?”

“Ever since you brought it to us.”

“Me?”

“You brought us the concept of individuality. It is the same thing.”

Awareness dawned. “Culture shock! That’s what all this is about, isn’t it? You didn’t know there could be more than one sentient being in existence. You didn’t know you lived at the bottom of an ocean on a small world inside a Universe with billions of galaxies. I brought you more information than you could swallow in one bite, and now you’re choking on it.”

Mournfully: “Choking. What a grotesque concept.”

“Wake up, Lizzie!”

She woke up. “I think I’m getting somewhere,” she said. Then she laughed.

“O’Brien,” Alan said carefully. “Why did you just laugh?”

“Because I’m not getting anywhere, am I? I’m becalmed here, going around and around in a very slow circle. And I’m down to my last”—she checked—”twenty hours of oxygen. And nobody’s going to rescue me. And I’m going to die. But other than that, I’m making terrific progress.”

“O’Brien, you’re . . .”

“I’m okay, Alan. A little frazzled. Maybe a bit too emotionally honest. But under the circumstances, I think that’s permitted, don’t you?”

“Lizzie, we have your priest. His name is Father Laferrier. The Archdiocese of Montreal arranged a hookup for him.”

“Montreal? Why Montreal? No, don’t explain—more NAFTA politics, right?”

“Actually, my brother-in-law is a Catholic, and I asked him who was good.”

She was silent for a touch. “I’m sorry, Alan. I don’t know what got into me.”

“You’ve been under a lot of pressure. Here. I’ve got him on tape.”

“Hello, Ms. O’Brien, I’m Father Laferrier. I’ve talked with the officials here, and they’ve promised that you and I can talk privately, and that they won’t record what’s said. So if you want to make your confession now,

I'm ready for you."

Lizzie checked the specs and switched over to a channel that she hoped was really and truly private. Best not to get too specific about the embarrassing stuff, just in case. She could confess her sins by category.

"Forgive me, Father, for I have sinned. It has been two months since my last confession. I'm going to die, and maybe I'm not entirely sane, but I think I'm in communication with an alien intelligence. I think it's a terrible sin to pretend I'm not." She paused. "I mean, I don't know if it's a *sin* or not, but I'm sure it's *wrong*." She paused again. "I've been guilty of anger, and pride, and envy, and lust. I brought the knowledge of death to an innocent world. I . . ." She felt herself drifting off again, and hastily said, "For these and all my sins, I am most heartily sorry, and beg the forgiveness of God and the absolution and . . ."

"And what?" That gentle voice again. She was in that strange dark mental space once more, asleep but cognizant, rational but accepting any absurdity, no matter how great. There were no cities, no towers, no ashes, no plains. Nothing but the negation of negation.

When she didn't answer the question, the voice said, "Does it have to do with your death?"

"Yes."

“I’m dying too.”

“What?”

“Half of us are gone already. The rest are shutting down. We thought we were one. You showed us we were not. We thought we were everything. You showed us the Universe.”

“So you’re just going to *die*?”

“Yes.”

“Why?”

“Why not?”

Thinking as quickly and surely as she ever had before in her life, Lizzie said, “Let me show you something.”

“Why?”

“Why not?”

There was a brief, terse silence. Then: “Very well.”

Summoning all her mental acuity, Lizzie thought back to that instant when she had first seen the city/entity on the fishcam. The soaring majesty of it. The slim grace. And then the colors, like dawn upon a glacial ice field: subtle, profound, riveting. She called back her emotions in that instant, and threw in how she’d felt the day she’d seen her baby brother’s birth, the raw rasp of cold air in her lungs as she stumbled to the topmost peak of her first mountain, the wonder of the Taj Mahal at sunset, the sense of wild daring when she’d first put her hand down a

boy's trousers, the prismatic crescent of atmosphere at the Earth's rim when seen from low orbit . . . everything she had, she threw into that image.

“This is how you look,” she said. “This is what we'd both be losing if you were no more. If you were human, I'd rip off your clothes and do you on the floor right now. I wouldn't care who was watching. I wouldn't give a damn.”

The gentle voice said, “Oh.”

And then she was back in her suit again. She could smell her own sweat, sharp with fear. She could feel her body, the subtle aches where the harness pulled against her flesh, the way her feet, hanging free, were bloated with blood. Everything was crystalline clear and absolutely real. All that had come before seemed like a bad dream.

“This is DogsofSETI. What a wonderful discovery you've made—intelligent life in our own Solar System! Why is the government trying to cover this up?”

“Uh . . .”

“I'm Joseph Devries. This alien monster must be destroyed immediately. We can't afford the possibility that it's hostile.”

“StudPudgie07 here. What's the dirt behind this 'lust' thing? Advanced minds need to know! If O'Brien

isn't going to share the details, then why'd she bring it up in the first place?"

"Hola, soy Pedro Domínguez. Como abogado, ¿esto me parece ultrajante! Por qué NAFTA nos oculta esta información?"

"Alan!" Lizzie shouted. "What the *fuck* is going on?"

"Script-bunnies," Alan said. He sounded simultaneously apologetic and annoyed. "They hacked into your confession and apparently you said something . . ."

"We're sorry, Lizzie," Consuelo said. "We really are. If it's any consolation, the Archdiocese of Montreal is hopping mad. They're talking about taking legal action."

"Legal action? What the hell do I care about . . . ?" She stopped.

Without her willing it, one hand rose above her head and seized the number 10 rope.

Don't do that, she thought.

The other hand went out to the side, tightened against the number 9 rope. She hadn't willed that either. When she tried to draw it back to her, it refused to obey. Then the first hand—her right hand—moved a few inches upward and seized its rope in an iron grip. Her left hand slid a good half-foot up its rope. Inch by inch, hand over hand, she climbed up toward the balloon.

I've gone mad, she thought. Her right hand was gripping the rip panel now, and the other tightly clenched rope 8. Hanging effortlessly from them, she swung her feet upward. She drew her knees against her chest and kicked.

No!

The fabric ruptured and she began to fall.

A voice she could barely make out said, "Don't panic. We're going to bring you down."

All in a panic, she snatched at the 9 rope and the 4 rope. But they were limp in her hand, useless, falling at the same rate she was.

"Be patient."

"I don't want to die, goddamnit!"

"Then don't."

She was falling helplessly. It was a terrifying sensation, an endless plunge into whiteness, slowed somewhat by the tangle of ropes and balloon trailing behind her. She spread out her arms and legs like a starfish, and felt the air resistance slow her yet further. The sea rushed up at her with appalling speed. It seemed like she'd been falling forever. It was over in an instant.

Without volition, Lizzie kicked free of balloon and harness, drew her feet together, pointed her toes, and positioned herself perpendicular to Titan's surface. She

smashed through the surface of the sea, sending enormous gouts of liquid splashing upward. It knocked the breath out of her. Red pain exploded within. She thought maybe she'd broken a few ribs.

“You taught us so many things,” the gentle voice said. “You gave us so much.”

“Help me!” The water was dark around her. The light was fading.

“Multiplicity. Motion. Lies. You showed us a universe infinitely larger than the one we had known.”

“Look. Save my life and we'll call it even. Deal?”

“Gratitude. Such an essential concept.”

“Thanks. I think.”

And then she saw the turbot swimming toward her in a burst of silver bubbles. She held out her arms and the robot fish swam into them. Her fingers closed about the handles, which Consuelo had used to wrestle the device into the sea. There was a jerk, so hard that she thought for an instant that her arms would be ripped out of their sockets. Then the robofish was surging forward and upward and it was all she could do to keep her grip.

“Oh, dear God!” Lizzie cried involuntarily.

“We think we can bring you to shore. It will not be easy.”

Lizzie held on for dear life. At first she wasn't at all

sure she could. But then she pulled herself forward, so that she was almost astride the speeding mechanical fish, and her confidence returned. She could do this. It wasn't any harder than the time she'd had the flu and aced her gymnastics final on parallel bars and horse anyway. It was just a matter of grit and determination. She just had to keep her wits about her. "Listen," she said. "If you're really grateful . . ."

"We are listening."

"We gave you all those new concepts. There must be things you know that we don't."

A brief silence, the equivalent of who knew how much thought. "Some of our concepts might cause you dislocation." A pause. "But in the long run, you will be much better off. The scars will heal. You will rebuild. The chances of your destroying yourselves are well within the limits of acceptability."

"Destroying ourselves?" For a second, Lizzie couldn't breathe. It had taken hours for the city/entity to come to terms with the alien concepts she'd dumped upon it. Human beings thought and lived at a much slower rate than it did. How long would those hours be, translated into human time? Months? Years? Centuries? It had spoken of scars and rebuilding. That didn't sound good at all.

Then the robofish accelerated, so quickly that Lizzie almost lost her grip. The dark waters were whirling around her, and unseen flecks of frozen material were bouncing from her helmet. She laughed wildly. Suddenly, she felt *great!*

“Bring it on,” she said. “I’ll take everything you’ve got.”

It was going to be one hell of a ride.

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Michael Swanwick is one of the most acclaimed and prolific science fiction and fantasy writers of his generation. He has received a Hugo Award for fiction in an unprecedented five out of six years and has been honored with the Nebula, Theodore Sturgeon, World Fantasy, and five Hugo Awards as well as receiving nominations for the British Science Fiction Award and the Arthur C. Clarke Award. His short fiction has appeared in *Asimov's Science Fiction*, *Analog*, *The Magazine of Fantasy & Science Fiction*, and in numerous anthologies, and has been collected in *Cigar-Box Faust*, *A Geography of Unknown Lands*, *Gravity's Angels*, *Moon Dogs*, *Puck Aleshire's Abecedary*, *Tales of Old Earth*, and *The Dog Said Bow-Wow*. Michael's latest novel is *Dancing With Bears*, a post-Utopian adventure featuring confidence artists Darger and Surplus. He is currently at work on two new novels. He lives in Philadelphia with his wife, Marianne Porter.

The Necromancer in Love

Wil McCarthy

The young necromancer is a blight on the social landscape, because when his sweetheart meets with an untimely interruption of service (don't they all? don't they always?), he's bound to do something the rest of us regret.

Class, listen. This is important. Put down your pencils, close your laptops, shut off your recorders and listen; we'll get back to histopathology later. The information in this class can be misused, and we need to talk about that.

The necromancer is a person much like yourselves. Naive, desperate, he clutches at emotional straws while he sobs on his girlfriend's blouse. She isn't dead, he thinks, and there's more than just denial in this thought. It's the mitochondria, right? The power plants of the cell, these little bastards are obligate aerobes; a few minutes without oxygen will unravel them permanently.

All right, there are tissue-specific differences. Some tissues can be totally ischemic for hours and recover on reperfusion. Sadly, the brain and heart are not among these tissues, and when the power plants go belly up they

also spill proteins that can trigger apoptosis, or cellular suicide. But executing that program also takes energy, which, under the circumstances, the cell doesn't have. The influx of sodium and calcium ions, coupled with the efflux of potassium ions, has also caused neurons to swell but not burst. It's a bit of a mess.

But aside from these niggling problems, the cell—every cell—is intact! The nucleus, the cytoskeletal transport networks, the endoplasmic reticulum dripping with ribosomal protein factories . . . that stuff won't rot for at least a day, even at room temperature. It isn't dead at all, any more than a city in the grip of a power failure is dead. Mitochondria take in oxygen, glucose, and a low-energy phosphate molecule called ADP. You've all had Biochem 210, right? You know mitochondria exhale CO₂ and a high-energy phosphate called ATP, which is fuel for everything else. If you don't know that, I suggest you start making alternate career plans.

Anyway. Everything else in the body is idled, sleeping, waiting for the kiss of energy to return it to life. *And it will*, vows the young man. By all he's ever held dear, it will.

Young, naive, he begins with the basics: a bath of the fuel itself in a saturated solution of lactated ringers. Smelling like Gatorade and beef bouillon, it flows over

that beautiful face, that beloved body now stripped of its tattered clothing. When she floats, as of course she must, he ties her down with weights.

And nothing happens. Hear that? Nothing happens; this thin, slimy broth doesn't penetrate her openings, doesn't pierce her skin and flow through. How could it? Reluctant, torn with anguish, the young man violates her with tubes, forcing the stuff inside her. And still nothing happens, because the osmotic potential of the ATP is insufficient to drive it across a trillion cell membranes.

Finally, he begins to really think about the problem. He pressurizes the tank to three atmospheres, then backs it off slightly when its groaning and creaking start to freak him out. Gut-shot with a popped rivet, he'll be of no use to her, right? Next he switches on an ultrasonic cleaner, hoping the combination of vibration and pressure might force the ATP across some membranes.

Again nothing happens, but it's a different sort of nothing. Are there subtle changes in her pallor, her rigor, her *elan vital*? Does she look perhaps a bit less like a doll, more like a living creature in some deep, deep coma? Through the murky white fluid it's hard to say, and even in his raging grief he knows better than to trust his own judgment. He knows that much, yes.

But he's encouraged, and from where the rest of us

are standing, that's a problem. No leash can hold him now.

For an hour he lets the potion work its way into her, and then he pops the tank seals and lifts her out. Apologizing, he hangs her from chains. First upside down, to drain the fluid from her lungs and stomach, and then in even less dignified ways, believing he must be thorough. There are so many places these chemicals don't belong!

When it's done he hoses her down with cold water and straps her to a table. The final touch: an electrical shock to kick-start the excitable membranes of the heart and nervous system. It's not a gentle thing—two hundred joules, minimum, probably a lot more—and it leaves visible burns on her chest and forehead.

Does he really expect this to work? If you asked him, he'd certainly say so. "God, it has to. It ought to, yes. I'm not aware of any reason why it wouldn't."

Why, then, does he shriek and pull away when she opens her eyes? Maybe it's just the look on her face—of shock, of bewildered agony and mute, animal fear. Has every pain nerve lit up? Has he created some unthinkable biohell inside that mortal shell? Her own scream is silent, and though she gasps in a single breath, the muscles of her face soon slacken, their fuel supply . . . depleted. She

only absorbed a few seconds' worth. Not even long enough to lay down a memory of what's happened here.

“Holy crap,” says the young necromancer, his heart thumping so hard he can hear it clicking wetly in his throat. He's seen her sad, excited, sleepy, bursting with pride and elation. He's seen her drunk and asleep and even dead, but until this moment he's never seen her in pain.

He takes her cold hand, presses his cheek against it earnestly. Gasping, sobbing, his eyes spilling over with tears. “I'm sorry, babe. I'm so . . . I'm sorry.”

This is going to be harder than he thought.

In every case, this much is certain: the necromancer has medical training, like all of you, and unquestioned access to certain materials. He's known well enough by his peers that he can move around without drawing attention, but not so popular that people randomly poke their noses into his business.

Maybe he's flunked out of his residency for cutting too many corners, for doing too many things his own way. Some of you should be paying attention to this! If he were truly brilliant his teachers might have cut him more slack, but he's a creature of passion whose intellect runs hot and cold, or flickers like an old neon sign. Determination can

only take him so far, and when he falls in love—really falls, for the first time in his life—something has to give. Spilled dreams pile up at his feet; he can't bear any further loss, or believes he can't. Won't try, at any rate, and that's the problem.

Maybe he works nights as a coroner's assistant and days at a biotechnology company. He really does live alone in a big house, or else in one of those spacious, unfinished lofts you don't see much anymore. The kind that actually are converted industrial space, not mahogany fakes custom built for urban yuppies.

His hobbies include sculpture and metalwork, and usually some kind of hands-on electrical thing. Could be ham radio, could be TiVo hacking, could be some exotic breed of digital photography. Thermal IR, Kirlian auras, something like that. Everyone has neighbors, everyone is seen, but this man's neighbors are accustomed to strange comings and goings, to loud noises and flashes of light.

“Oh, that guy,” they say. “Yeah, he's always doing stuff like that.”

Truthfully, whatever unease they feel about it is tempered with admiration and even envy, because the young necromancer is exactly the sort of rugged, handy, easy individualist every American is supposed to be, but few actually are. Sometimes he makes even his teachers

feel inadequate, which is part of his problem. Eccentric and smug—not a good combination. Again, yes, some of you out there should be paying particular attention!

Computer people would call him a hacker. Scholars would call him dilettante. To soldiers he'd be “goofball” or “yardbird” or “wiseass,” and in politics or business he'd be a wildcard, a loose cannon. Not insulting terms, per se, but not trusting ones either.

Still. “He's got a real pretty girlfriend,” the neighbors will tell you. “Must be doing something right.”

Yes, the girl is always pretty, always charming, always possessed of that peculiar mix of innocence and sexual precocity that no man can resist. Human nature, right? If she were dumpy and timid he'd get over it, but this one is *the* one; he'll never do better, and he knows it.

Tragedies are always born of love.

It must feel strange to go out and leave her alone. His best girl naked, strapped to a table, not breathing! But he needs supplies, needs access to high-end equipment. Needs to show his face at work to avoid raising suspicion.

He's cool about it, too, or he wouldn't get far, and we wouldn't still be talking about him. He nods to his colleagues, says a few words to them here and there, maybe not smiling but certainly not catatonic with grief.

He passes muster; nobody spares him a second glance, even when he pulls a bacterial sample vial out of cryostorage, thaws it, throws a few bugs under the microscope and starts jabbing them with micropipettes, injecting God knows what.

Satisfied after a bit of chemical testing, he puts the engineered bacteria in a petri dish filled not with nutrient agar, but with a growth medium composed of living cells. You're familiar? Yes? He tapes it shut, pulls it out through the glovebox airlock and slips it in his pocket, warm as any incubator. Rifling through cabinets, he pilfers drugs, needles, electronically operated valves, all sorts of things. He stuffs it all in a red nylon lunchbox and then, telling his disinterested coworkers he's not feeling well, leaves early.

Before he goes home, though, he stops off at a medical supply store to pick up a few more items, things they don't have at work or that he can't just smuggle out under his jacket. A respirator, for example. A few liters of PolyHeme blood substitute tagged For Veterinary Use Only. An automated chest compressor we used to call the Pumper. Have you worked with those at all? Like a seat belt threaded through an electric laundry wringer. We see a lot less of them than we used to—part of the growing disillusionment with chest compression. Anyway, he gets

more than he needs, much more than his revised plans actually call for. He's partly impulse shopping, partly just making sure he's ready for anything. He wasn't a Boy Scout, but he does admire the ethic.

When he gets back home, his girlfriend looks exactly the same as when he left: cold, livid, extinguished. Shouldn't she?

Grimly, he begins his work: harvesting the bacterial colonies, dissolving them in saline, injecting her with them. Crudely restarting her heart, her lungs, forcing the blood to circulate, to spread the pathogens around.

What are mitochondria, after all? Aerobic bacteria, swallowed by some larger cell a billion years ago and somehow, randomly, put to work rather than digested. And from there sprang all the plants and animals of the world, eh? All the amoebas and slime molds, all the fungi and protozoa.

Maybe we swallowed the wrong bug. Silly, fragile little things, they die without oxygen, but there are similar bacteria still alive in the world that don't: the rickettsia, which burrow right into eukaryotic cells—living or dead—and set up shop. What if scrub typhus or Rocky Mountain spotted fever had its ATP production genes replicated ten times over? What if it found traction in a viable corpse? What if growth factors helped it multiply,

spreading through all the cells of the body? Or most of the cells, or even some?

Only one way to find out, he thinks.

“Soon, baby. Just hang on a little while longer.”

Is there a soul, and if so, at what point does it depart the body? Can it be prevented? Chained? Pickled in place with formaldehyde? Make no mistake, we live in an Age of Horrors, where all kinds of things have become crudely possible. In thirty years' time, necromancy may be a staple of emergency medicine. There may be textbooks and courses in it, warning against the unintended consequences of this or that. How to preserve the original personality, how to ward off impulse dysplasia and silence the Hungry Ghosts, how to avoid unleashing a zombie plague upon the land . . . death may one day take its place with “vapors” and “dropsy” and other quaint little disorders people simply don't get anymore.

But we're not there yet, hmm? Indeed, today's education system errs on the side of suppression, of saying too little, of encouraging each young necromancer to believe he's the first, the smartest, the *only*. And so we see the same patterns unfolding, again and again.

Don't take notes, just listen.

Other things we know before we even meet him: he's

between the ages of twenty-five and thirty-four. He plays chess but not football, although he's usually strong enough, and often quite agile. He may well keep an online dream diary, and show a keen interest in lucid dreaming and dream control. As a child he was given to sleepwalking—a disorder which sometimes lasts into adulthood—and he probably still takes sleep medications of some kind.

He's never homosexual, and rarely a smoker, but he has been convicted of, or pled guilty to, one criminal offense. Rarely two, for some reason. In more than fifty percent of cases, he also plays a musical instrument.

The Bureau of Justice Statistics home page logs fourteen instances of necromancy across the United States, mostly hidden away under “felony desecration of a corpse,” with a smattering of reckless endangerments and some panicky overtones of attempted bioterrorism. Not so many, you might say, but the trend is definitely up, with six more cases expected this year alone.

Other things we know about *her*: she's between the ages of nineteen and thirty, though never more than two years older or seven years younger than he is. She's probably blonde or redhead, although it may come out of a bottle. She looks good in a tight sweater, and has the sort of infectious laugh that makes people in restaurants

turn around and look.

Typical quote from him: “No croutons, babe. They interrupt the texture.” Typical quote from her: “Because they shot him, sweetie.”

They’ve been dating for less than six months—past the third-date and eight-week barriers, but not long enough to see each other at their worst. The honeymoon is decidedly not over. Not yet. And that’s the problem.

Even an armchair medical sleuth can see the Achilles heel of the necromancer’s plan right away: rickettsia infections are easily transmitted. Through close (though rarely necrophilic) contact with his dear departed, the necromancer is almost certain to suffer the bite of a chigger, a flea, a body louse in need of a warmer host. He contracts the illness himself, yes, unless he’s taken steps to prevent it, or to treat it at the first sign of rash or fever or headache. And even if *he* somehow doesn’t catch it, *she*’s a carrier—a rich reservoir of the disease organism for whom a “cure” would be fatal. Or refatal, if you prefer.

So.

She sits up: groggy and confused. Gasps in a first uncertain breath, looks around her, looks at him. Tries to speak, and right away he can tell there’s something

wrong. Her voice is slurred, her lips drooping, her words unintelligible. She looks like a stroke victim and sounds like a mentally challenged drunk.

Wheezing, she gets off the table and shambles toward the door, ignoring his calls, his cries, his imprecations. Even the iron grip of his hands, attempting to restrain her.

Sometimes she gets away. Sometimes she infects others, with a mix of symptoms that don't occur in nature. Sometimes these other victims die right in front of their baffled doctors, only to rise again in an hour or two, like something out of a bad movie. Zombies, yes, the emerging contagion no one is talking about.

Don't write this down. Don't record this. You didn't hear it from me.

In any case, one thing she doesn't do is regain full consciousness. He grasps the reason, and communicates it to himself silently, in the voice of Scotty from Star Trek: "She needs more power, Laddie."

You don't know Scotty? All right, never mind.

The other thing she doesn't do is protect herself against the rickettsia's harmful effects, or against invading pathogens of any sort, or against the steady seep of her own hungry gut bacteria. How could she? As her immune system comes online the first thing it does is attack the pathogens keeping it alive. By the time he

catches her, restrains her, straps her to the table for a thorough examination, he imagines he can already see the first signs of secondary infection, smell the first hints of carrion on her breath, feel the bruised-apple softness of injuries that will never heal. Acting in what he believes is her best interest, he's managed to turn his beloved into a deranged leper.

Weeping, possibly even howling in despair, he shoots her up with broad-spectrum antibiotics and apoptosis inhibitors, and drowns her in iced saline.

Sometimes he stops there. Sometimes she kills him and eats him. Sometimes he succumbs to the infection and loses interest in Earthly affairs. Love doesn't always conquer all! But these halfway Harrys are no more noble, no less deranged than their brothers in sin, and this isn't their story.

Our necromancer—damn him!—dries his tears, wipes his hands, straightens his spine and gets back to work.

The stages of grieving are anger, depression, denial, bargaining, and acceptance. Arguably, the necromancer experiences all but the last of these, all smooshed together into a single driving impulse: to do something about it. Our boy has had enough of failure.

In the ice water bath he can keep the body for a good long while—long enough to make some calls, do some web research, thumb through back issues of *Nature*, *The Lancet*, *NEMS Kinematic Review* and my personal favorite, the *Journal of Cerebral Blood Flow and Metabolism*, beloved of brain-death researchers everywhere. There are several overlapping problems in need of solution here; he needs a lot of information.

He puts in longer, more convincing appearances at work. He has to buy groceries, do laundry, pay bills. You think mad scientists don't have bills to pay? He waits in line at the DMV, just like you.

He also manages, somehow, to charm away suspicion. The police never search his basement or his attic or the back room of his loft for the missing woman. A week passes, then a month, and finally the better part of a season. He falls into a routine of self-maintenance—how could he not?—and despite his best efforts he begins to forget the angle of her smile, the furrow of her brow, the exact lilting tone of her giggle. Memory is not a hard drive or a box of old photographs; it's designed to show the past through the distorting lens of the present. In his dreams she smells of rot; her footprints are fetid black sponge marks along the floor. If he didn't take sleep medications before, he does so now. If he had the scrip

already, he triples his dosage and still wakes up screaming, sweating, his stomach in knots.

But he hasn't been idle during this time. In the burgeoning literature of the nanotech industry he's found whole classes of machinery powered by ATP, whole companies dedicated to supplying it in various ways. There's even a mitochondrion-sized device called a Freitas cell that uses nanopellets of gadolinium—a radioisotope chemically similar to uranium, but lighter—to power an endless reconstitution of ADP into ATP. Tireless, robust, far simpler in design than the mitochondria they could reasonably be expected to replace. They'll do.

For ten thousand dollars the necromancer buys a hundred trillion of these, suspended in a solvent called toluene in a little vial of brown glass. He does other things as well, which I won't describe here for fear of spreading the memes in unnecessary detail. This is a warning, not a how-to session.

Long story short? Too late, yes, I know. But there comes a moment when she opens her eyes again. Looks at him, looks around her, feels the shackles holding her down. Remembers the moments leading up to her death, compares them against her current surroundings. Does the math.

“What have you done?” she asks him, with a cool, contemptuous anger. She speaks his name, then repeats the question.

Her voice is all wrong: strong yet oddly squeaky. She has no need to breathe. She could live a hundred years in a coffin without a single whiff of oxygen. Her eyes are wrong as well: too wide, too vivid, too glittery-cold. Her mind as sharp as a razor back behind them somewhere. If looks could kill . . .

“Darling,” he tries.

But her flesh is stronger, too. If she feels pain, she masters it, bursting her restraints or possibly wriggling out of them, heedless of the skin on her wrists and ankles.

Does he try to reason with her? Crack a joke? Pull a gun? Even if he fires it, even if he punctures the heart, it won't stop her. She doesn't need a circulation, either. Ironically, a silver bullet lodged inside her might slowly poison the tiny power plants. A lithium bullet would work even better, or any of hundreds of organic toxins, especially in the brain. It hardly matters at that moment, though, because he's laid no real plans for putting her out of commission again. Not his sweet treasure! Not this time!

“I love you,” he says. “Look what I've done, look at all I've sacrificed. For you. For us!”

But what's he really thinking? That they can get married, raise children? Are they even still members of the same species?

“Fool,” she tells him, striking him dead with a backhand swat. “How many times have I told you not to cling?” And then of course she breaks through the wall to begin her rampage. Hell hath no fury, indeed.

The arc of each necromancer's tragedy seems preordained; even with differences as great as the similarities, the similarities are vast . . . and troubling. And I will ask each of you to consider this, and to look at your classmates and within yourselves for any symptoms of the disorder.

You are here for one reason: to help and heal and do no harm, so please believe me—especially you men, yes, are you listening? Believe me when I say that women don't come back to you once they've left. It's a problem mere science will never correct, and one that requires a bit of gentlemanly restraint. No slashing tires! No cheating death!

That's all for now, yes. Read chapter six tonight, submit a summary in the morning, and never speak of this again, to me or anyone else. One day we'll have the power to take on death with the finesse it truly demands,

but I caution you: Even then, the gift of love itself will remain fragile, and perhaps not so easily resurrected.

Sleep well for your exams. I'll see you in the morning. Young man? Yes, you. Mr. Taylor, isn't it? Please come with me. I'm afraid I have some bad news.

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Wil McCarthy is a former contributing editor for *Wired* magazine and science columnist for the SyFy channel (previously SciFi channel), where his popular "Lab Notes" column ran from 1999 through 2009. A lifetime member of the Science Fiction and Fantasy Writers of America, he has been nominated for the Nebula, Locus, Seiun, AnLab, Colorado Book, Theodore Sturgeon and Philip K. Dick awards, and contributed to projects that won a Webbie, an Eppie, a Game Developers' Choice Award, and a General Excellence National Magazine Award. In addition, his imaginary world of "P2" (from the novel *Lost in Transmission*) was rated one of the 10 best science fiction planets of all time by *Discover* magazine. He holds 13 U.S. patents, and is currently the president and chief technology officer of RavenBrick LLC, a smart materials company. He can be found online at www.wilmccarthy.com and www.ravenbrick.com.

Breaking the Frame

Kat Howard

“Escape”

The photograph is of a woman at the center of a forest. She is slim and tall and pale as the birches she stands among. The shadows turn her ribs and spine into branches, into knots in the wood. Around her arms, the peeling white bark of the birches, curved in bracelets. Between her thighs, the hair is dense and springy like moss.

She is turning into a tree.

All the stories tell us that this sort of transformation is the kind of thing that used to happen all the time, when maidens fled—good, virtuous girls—before the rampant desires of the gods. When they could run no more, they stopped, put down roots, raised up branches, and made themselves inviolate. Very nearly always a god will prefer warm, wet flesh to splinters.

To escape a god, a woman must lose her self.

The wood closes around her.

It was the first photograph he took of her.

“I need a model,” he said. “For an ongoing series of work. Photographs.”

Francesca sighed, and sipped her coffee. “And I’m sure it’s very legit, really, and any nudity will only be tasteful and artistic, and—what are you doing?”

He had set a laptop on the table next to her, and was opening files. “Here’s my portfolio. My agent’s card, and the information of the last gallery where I showed. Call them. Google me. Talk to anyone. Then call me.”

The photos on the screen were good. If he was a creep, at least he was a talented one.

“And who do I ask for, if I decide I’m saying yes?” Her voice was warm at the end of the question, an answer already implied in the asking.

“You mean when?” He smiled, and he was gorgeous. “Vaughan. Vaughan Matthews.”

She said yes. Of course she said yes. There are no stories when people say no.

“Six Seeds from a Pomegranate”

At the center of the photograph is a pomegranate, torn open. Seeds are scattered everywhere. At the right edge of the image is a young woman, hair tangled and eyes

soft, as if she has just woken from a lover's bed. Her hands are stained red.

Between her lips is a pomegranate seed.

That was the first time they slept together. Francesca's hands were still sticky from the pomegranate's juice, and she left red smears across the white cotton of Vaughan's sheets. When they kissed, their mouths tasted of the wine-dark fruit, simultaneously sweet and tart, of desire so great that a person might consign herself to the underworld in order to satiate it.

After, she sat up, the red-smearred sheets pooled around her waist. "You realize the only way this would be more of a fucking cliché would be if I asked you for a cigarette right now."

"What's wrong with being a cliché?" Vaughan asked. "There's truth in them. They wouldn't last so long otherwise."

He tugged the sheet from her fingers, then laced his hand with hers. Tenderness, not lust.

This, Francesca thought. This was going to be trouble.

"Delilah"

The woman is shot from behind, thick, tangled hair

streaming down her back. She is barefoot, in a thin white dress. Held lightly in her left hand is a pair of scissors, blades open.

Transformation is a magic that becomes more natural with repetition. It is difficult at first, to slide behind someone's eyes, to pull their skin up and over yours. The seams show. The fit isn't quite.

The next time is easier, and then the next, until becoming a new person takes no more work than buttoning on a new shirt.

The thing about changing into someone else, inhabiting their life, even if only briefly, is that each time it takes a heartbeat longer to remember who you were. One more breath before your soul returns to yourself. You are never quite the person you were before.

Perhaps not pearl-eyed, but sea-changed. Something strange.

“I want to try the shot with you completely submerged.”

“Vaughan. The water is cold. Not lukewarm. Not tepid. But freezing-my-tits-off cold.”

“It's making the blue tone in your skin fantastic. I'll get some close-ups, too.”

Francesca stared at him, then climbed back into the

lake. The layers of skirts she was wearing clung to her legs, weighing her down, and the flowers that had been strewn across the surface of the water were bedraggled and worse for wear.

She supposed she was, too.

In and out of the water she climbed, Ophelia rescuing herself, only to drown again at her lover's request.

Vaughan showed her the digital shots as he worked, and he was right—of course he was—about what the cold water was doing to the color of her skin: bluing her lips and shadowing her eyes in ways that makeup never could.

Francesca looked haunted, broken, dead.

The photographs were gorgeous.

“One more, as the sun sets.”

So numb she couldn't shiver any more, Francesca slid back into the water. And she slid beneath the surface, and she slid into darkness.

“Pray You Love, Remember”

Taken as the sun sets, the living fire on the surface of the lake is a stark contrast to the drowned woman floating beneath it.

This photograph was only exhibited once, and

Matthews has said he will never sell it. Speculation in the art world suggests this decision is due to the circumstances under which the shot was taken. The model, Francesca Ward, nearly died, and then fell ill due to pneumonia.

Matthews did no new work during her illness.

Francesca fell in love with Vaughan when he brought a book of fairy tales to read to her while she was sick.

That's not quite true.

But she felt an ache inside her chest as Vaughan's voice broke over Beauty leaving her family and running back to the side of the ailing Beast, and the ache turned to warm honey as his hand fell from the page to hold hers.

It was safe then, his hand on hers, to say the word "love."

But really, the falling had been a foregone conclusion from the moment he showed her his photos and asked her to be in them.

Vaughan captured pieces of the world—never as it was, but as it could have been, as it *almost* was. As it might actually be, if we just looked around the edges and noticed the magic.

That was how he saw her, too, Francesca thought. As if she might be magic around the edges.

When someone sees you like that, falling in love is always only a question of when.

“Beauty and—”

In the foreground of the photograph is a rose on top of a cracked mirror. There are clocks everywhere, fallen, tilted, askew, and all with their hands fixed at three minutes to twelve. Given the shadows in the picture, one assumes the hour being chased is midnight.

At the left is a woman in a ruined ball gown. She holds the head of a beast.

There is a thing that happens to stories, when you try to change them. Narrative is resistant to change. It clings to its themes, its arcs, its tropes.

If you find the fault lines along the story’s center and apply pressure, you can expose the pulse of its bloody heart. You can draw your pen through its entrails and read the signs within.

But once you have, once you have gazed upon the heart of a story, your changes will be woven into its fabric, embraced as a variant text. The story will reshape itself around what you have written, will scar over the

wounds that you have so carefully made.

You can change it, but the thing you loved in the story will always look different to you, after.

“Look back in—”

The woman is shot from the back, and there is a bright light before her, so we see her only in outline. She is climbing up a set of steps hewn into rock, climbing out of somewhere.

Or perhaps not.

A hand reaches through the light toward her. Instead of reaching for it, she looks over her shoulder, turning back.

“That wasn’t the photograph I took. You saw the finished shot. You know.”

“I was there, Vaughan. I know that’s not the shot. I didn’t turn my head, never looked back.”

Why would she have, Francesca thought. She knew the story of Orpheus and Eurydice. It was Orpheus who looked back, and Eurydice who disappeared, returned to death. She trusted him enough to follow him out of the darkness, but he had no faith in her silent footsteps.

“I didn’t look back,” she repeated.

“I know,” said Vaughan.

“But I thought about it.”

“What?”

“I thought about what it would be like, walking out of death, and back in to life, and how my feet would ache from walking, and how the sun would hurt my eyes, and what if I didn’t want to go with him?”

“What?”

“I mean, we assume Eurydice loved Orpheus because of the story, and how he goes down to Hades for her and everything, but no one ever asked her if she loved him. No one asked her if she wanted to go back.”

“So you did.”

Francesca laughed. “I guess I did. I’m sorry if I fucked up your picture.”

“I’m not. And you didn’t. It isn’t what I thought I was getting, but it’s good.”

The problem with wonders is their duplication. When something happens once, it is a miracle. When the miracle recurs, it must be renamed.

Language is not meant to contain miracles. To manifest, they require somewhat else.

“Subtext”

The photograph is a nude. The model's body is entirely covered by lines of text. The quotations are taken from fairy tale and myth, romance and fantasy, and they turn the model's body into a palimpsest from a commonplace book.

However, if the text on the body is read carefully, it becomes clear that certain of the stories have been altered from their known forms.

Which ones have been so rewritten is a matter for debate.

Shadows of words remained on Francesca's skin, ghost-tattoos of stories that almost were.

She had asked Vaughan not to tell her the lines he chose, not to say which stories he was inscribing on her skin. She had kept her eyes closed, had not read what was written on her body.

And still.

“Some of them changed,” he said. “Like this one: “Find me,” she said, and stepped out of her shoes of glass.””

“It makes the story better,” Francesca said, “if it's told like that.”

“How so?”

“Well, isn’t it more fun to think of them in conspiracy together? Instead of the Prince being some kind of foot fetishist and Cinderella just waiting around, happy to marry whoever shows up with her shoe?”

“When you put it like that, yes.” Vaughan traced the words braceleting Francesca’s wrist, words he had written there: *and only in the mirror to see the other*. The phrase was unchanged on her skin, unchanged in the photograph. Others weren’t and his skin prickled as he read them. “Francesca, I don’t think it’s my camera doing these things.”

“No. I don’t, either.”

“Every Maze has a Monster”

This is a triptych of photographs, done in sepia. The first two are cross sections of a labyrinth, old, with crumbling rock walls. At the bottom, running through the twists of the maze, is a golden thread.

In the third photograph, there is the same labyrinth, the same thread, but now we are in its center. A woman stands there. She holds a spool of golden thread in one hand, and she is smiling.

*It is impossible to tell if she is unwinding the thread,
or gathering it back up.*

Stories change. They become unexpected, and require a braver sort of belief. Not belief in what is, but belief in what could be.

Possibility.

Power.

“The picture didn’t change,” Francesca said.

“Did you expect it to?” asked Vaughan.

She thought of the cool air, the dry scent of dust, the strength of the cord she had wound through her fingers.

“No. No, I didn’t. The way you composed the shot, Ariadne was making her own choice.”

“You’re still not going to tell me what direction you were winding the thread, are you?”

“What direction do you think I was winding it?”
Francesca smiled.

“Half Sick of Shadows”

A boat rests beneath a willow tree.

Scattered near the boat are pieces of discarded armor. Among them, the white shield, three bends gules,

of Sir Lancelot.

A white dress drapes the armor.

The lady is in the water, not drowned, but smiling.

The light on the water is brilliant, bright glints like scattered diamonds. Like the pieces of a shattered mirror.

“Have you ever,” Vaughan asked, “thought about taking your own pictures?”

“Actually, yes. I know exactly the one I want to start with.”

“Freedom”

Francesca Ward’s photograph is composed in a manner that echoes “Escape,” by Matthews. But while the two images are in dialogue, “Freedom” is no mere imitation.

Rather, Ward’s self-portrait is a reimagining. The strong lines of her body, the frank gaze with which she looks out from the photograph makes clear that this is the story of a woman, not of some thwarted god’s prize.

The tree is split, and she is stepping out of it.

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Cotillion

Delia Sherman

Celia Townsend's mother brought up the subject of debutante balls for the first time in June. It was the day after graduation, and they were discussing when Celia would have to be home from Maine at the end of the summer to get ready for her freshman year at Vassar.

"There's more to do than you think," Mrs. Townsend warned her. "For one thing, there's your dress. We'll have to order it and find shoes before you go. It doesn't do to leave everything to the last minute."

Celia looked blank. "What dress?"

"Your coming-out dress, dear. For the Snow Ball. We need to talk about an escort, too, but that can wait until you've been at college a while. It's a pity you don't know any boys."

Celia didn't point out that this wasn't her fault, since her parents had sent her to an all-girls school so she wouldn't have any distractions from her schoolwork. But she did roll her eyes.

"You're not going to be difficult about this, are you, CeCee?" her mother said anxiously. "I know some of your friends find coming out horribly old-fashioned and

irrelevant, but I honestly fail to see what difference it's going to make in Vietnam whether you go to the Snow Ball or not.”

Celia shrugged. “I said I'd do it, didn't I?”

It would have been very uncool to admit it, but secretly Celia was looking forward to the Snow Ball Debutante Cotillion. Sure, coming out was old-fashioned. That was the attraction. Celia liked the past—or at least selected bits of it, like long dresses, long hair, castles, anything with lutes or implying lutes. She loved Zeffereilli's *Romeo and Juliet* and Tom Jones and old stories and folk music, the traditional kind: ballads with magic in them and star-crossed lovers. The past was romantic. You could have adventures in it, the clothes were cool, and exciting things happened, like abductions and falling in love. Celia, who had never had an adventure or been in love, had high hopes for the Snow Ball.

The reality, however, turned out to be about as romantic as a school assembly. She liked her dress, which had organza petals at the hem that rippled when she moved. But her mother wouldn't let her bind up her honey-colored hair with ropes of pearls as she'd wanted to. And there'd been a lot of boring standing around in a drafty hall with thirty other girls and their parents while

her mother poked at her hair and told her to stand up straight before her name had been called, and she'd swept into the ballroom on her father's arm for her Big Moment.

Some Big Moment. The lights had made her squint and she'd wobbled coming up out of her curtsy and her father had stepped on one of the organza petals and ripped it off. Afterwards, she was officially Out. Big deal. Except for the fact that her mother was happy with her for once, she would have preferred to stay In.

Celia extracted a cigarette from her white beaded bag, lit it, and leaned her elbows on the pink tablecloth. Smoking was one of the evil habits she'd taken up in the heady freedom of living away from her mother for the first time in her life. Another was her date, who she'd met at a Yale mixer in the fall. His name was Guy Duvivier, and he was lounging on a gilt bamboo chair with his feet up on the rail of one of the private boxes ringing the ballroom. He had a long, bony face, heavy-lidded tiger's eyes, and long sandy hair pulled back with a rubber band. There was ash on his silk lapel and a slightly foolish expression on his face, both courtesy of the joint he was palming under the table.

Celia exhaled a disgusted stream of smoke and turned her eyes to the dance floor. Lester Brown and his Band of Renown were playing a foxtrot. The floor was a

chiaroscuro swirl of white dresses and black tail-coats, punctuated by the golds and scarlets and royal blues of the mothers' gowns. Celia caught sight of her best friend Helen and her date swaying at the edge of the mass, gazing into each others' eyes and obviously having a wonderful time.

Celia shifted restlessly on the hard, narrow chair. "Let's dance," she said.

"Why?" Guy released a thin haze of sharp-sweet smoke, raised his hand for another toke.

"It's a ball, Guy. You're supposed to dance at a ball."

"It's a mating ritual left over from before the Flood." He leered at her. "We don't need no stinking ritual to mate, eh, C?"

Celia had no intention of mating with Guy at all. When she'd first started to go out with him, she'd thought he was a romantic, but it hadn't taken her long to find out that he just dressed like one. Unfortunately, she'd already asked him to this stupid ball, and he'd accepted. One more crack like that, and she'd break up with him tonight, even if it left her dateless for the rest of the season. There was only so much she was willing to do to make her mother happy.

The number ended to a patter of well-bred applause. Couples milled about the floor, greeting friends, changing

partners. The band left time for everyone to settle into the new configurations, then struck up again: a raucous cha-cha-cha. The curtains to the box stirred and someone said, “Carmen Miranda in white gloves. The mind boggles.”

Celia didn't recognize the voice. It was vaguely English, a resonant tenor like a clarinet, full of overtones and harmonies. Looking around, she saw a tall figure in a tail coat holding aside the box's curtain with one hand.

“I thought I was alone,” the figure said. “My apologies.”

“No, no, come in,” said Celia.

“Yeah,” said Guy. “Come in. Bring your friends. We can have a party.”

The stranger released the curtain and moved forward into the light. Celia's first thought was that he looked as cool and dangerous as Guy would have liked to look. He had long, flat cheeks and a faintly Roman nose, thin lips and a pointed chin. His skin was very pale and his black hair was pulled back with a black ribbon. There was a pearl dangling from his left ear.

“Guy Duvivier,” said Guy, without getting up.

“Enchanted,” said the stranger, and bowed.

“Valentine Carter.” He turned to Celia. “And you are Celia Townsend.”

Celia felt herself blushing. “How did you know that?”

“You were formally presented to the whole room not an hour ago.” He smiled at her. “I liked your curtsey. It had character.”

There was an awkward pause while Celia tried to decide whether he was laughing at her. She didn’t think so. His eyes were dark, deeply set, intense as a searchlight, and fixed unwaveringly on hers. It made her feel uncharacteristically shy.

The band slid from the cha-cha into a waltz. Still holding her gaze, Valentine said, “Miss Townsend, may I have the honor?”

“Nice earring,” sneered Guy. “Your boyfriend give it to you?”

“You’re stoned,” said Celia coldly.

“Out of my gourd,” Guy agreed. “Only way to fly.” He held out a sweaty hand. “Let’s make out.”

Mortified, Celia glanced at Valentine, who was politely watching the dancers. “I apologize for Guy,” she said. “He’s not a total jerk unless he’s stoned. I’d love to dance.”

Valentine bowed—she’d never before seen a man bow without looking like a dork—and offered her his arm. She laid her fingers on it and swept out of the box, followed by Guy’s plaintive, “Oh, man! Celia? Shit!”

The waltz as performed by Valentine Carter was

nothing like the waltz Celia had learned at Miss Corcoran's Dancing School. He skimmed her around the floor like a top, his hand on her spine forcing her to turn and turn, swooping like a swallow to the syrupy strains of Strauss.

Valentine squeezed her hand. "You are a delicious dancer, Celia Townsend."

Celia looked up warily. His deep eyes caught hers, held them in a long, teasing look. "If I were to kiss you," he said. "Would your boyfriend call me out?" His hand moved on her back, drawing her nearer.

Celia was fascinated—and suspicious. Valentine was so much like someone she'd make up, it was hard to believe he was actually for real. Rather breathlessly, she said, "Pistols at dawn? Guy? Not likely. I'd stay out of dark alleys, though."

"Forewarned is forearmed." He swept her into a twirl that made the organza petals on her gown flutter and flare. Laughing, Celia followed his lead. Who cared if he was for real or not? He had brought enchantment to the Snow Ball. And for the moment, at least, he was hers.

Celia stepped out of the bright lobby into the cold night air. Her breath ghosted back to her as she cuddled her coat up to her chin.

Valentine folded her hand in his and drew her down the steps of the Plaza Hotel towards the fountain, heading across town.

“Let’s walk,” he said. “The fresh air will revive you.”

“There is no fresh air in New York,” Celia complained, but it was only reflex. She was feeling indecently cheerful, considering that she’d just broken up with Guy—if you could even break up with someone who was nearly too stoned to speak. When Valentine brought her back to the box after the waltz, Guy had let her know that he didn’t like her dancing with foreign fags, and she had let him know that she never wanted to see him again. He’d tried to kiss her. Stoned as he was, it was easy to push him away. Valentine had caught him, and a moment later, Guy was in a chair in the corner of the box with his head on the pink linen tablecloth, snoring peacefully.

“Damn,” Celia said, disgusted. “Now there’s going to be the most incredible scene.” Her cigarettes and silver lighter were lying by Guy’s hand. She picked up the pack and pulled one out. Valentine took it from her hand and tucked back it into her purse.

“Let’s not make a big deal out of this,” he said.

“Someone might notice that I don’t actually have an invitation to this affair. Perhaps one of his friends would be willing to perform a discreet rescue? I’ll see you home,

if you like.”

Celia was momentarily side-tracked from the problem of what to do with Guy. “You crashed the ball? Why?”

Valentine’s smile broadened just a little. “To find you,” he said.

Everything went smoothly. Helen’s date had good-naturedly agreed to convey Guy’s snoring body home and Celia danced with Valentine until midnight, then left a note at her parents’ table to say she was walking home with a friend and not to worry. Now she was running past the Plaza fountain with her hair blowing back in the wind, hand in hand with the most romantic man she’d ever met in her life.

“That boy,” said Valentine. “Do you love him?”

Startled, Celia looked up at him, met an interested gaze, and quickly looked away again. “Guy? No way,” she said. “He thinks Herman’s Hermits are the pinnacle of musical achievement.”

“Does he love you?”

“God, no,” said Celia. “He’s far too in love with himself. This is a little weird, you know? I mean, we just met. We’re supposed to be talking about where we go to school or something.”

“Are we? Why?”

The question seemed genuine. “So we can get to

know each other better.”

“And talking about love does not lead to us knowing each other better?” He smiled down at her. “Never mind. We’ll talk about something else. Not school—I don’t go to school.”

“You don’t go to school?” Celia had never met anybody of her generation who wasn’t in school. “Are you a drop-out?”

“I am a lutenist,” he said. “I play with the consort called the Booke of Ayres. A consort is . . .”

“A kind of Renaissance band,” Celia interrupted him. “I’m not a complete ignoramus. The Book of Ayres—that sounds Renaissance too.”

“It is. Have you heard of John Dowland?”

“Of course I have. He was the greatest composer of madrigals and lute music in Elizabeth’s court.”

“Close enough.” Valentine sounded impressed. “You’re full of surprises, Celia.”

She laughed. “It’s just about my favorite music in the whole world. I don’t know all that much about it, really—there’s not a lot of records or anything. But I’m in the Madrigal group at school, and I know tons of ballads.”

“What do you know?”

Celia’s mind went blank. “Um. Let’s see. Stuff from Joan Baez, mostly, and Steeleye Span. They’re an English

group. Do you know them?”

“No,” he said. “Sing me something.”

“What, here, in the middle of Park Avenue? I can’t. What if someone hears?”

He had his arm around her shoulders, so when he turned to look up and down the street, he turned her too. Apart from the colored lights on the Christmas trees, the giant cross of lighted windows on Grand Central Station, and the headlights of a few late taxis, it was dark, and as quiet as Park Avenue ever gets. “There’s no one to hear you. And if there were, what’s the harm? Who would not want to hear a girl singing on a winter’s night, high and pure through the cold air?”

It was an appealing image. Celia said shyly, “I don’t know what to sing.”

He thought a moment. “Sing ‘Greensleeves.’ Everyone knows ‘Greensleeves.’”

She began very softly, almost under her breath. But once she got through the first verse without some doorman leaping out to tell her she was disturbing the peace, she got into it, and sang more confidently. Her voice did sound nice, purling away into the night. On the third verse, Valentine joined her, winding a supple tenor up and down through the melody. Singing with him was even more fun than dancing with him.

“Greensleeves” was followed, after some discussion, by “The Silver Swan,” with Valentine taking the alto part, and “Tam Lin.” Valentine bet she didn’t know all the verses. Celia bet she did, and launched recklessly into the Steeleye Span version. There are twenty verses to “Tam Lin,” and Celia remembered them all. But Valentine won anyway, because he knew a different version, with forty verses. By the time he’d finished singing it, they were on 83rd Street, a block away from Celia’s apartment.

Valentine stopped walking. “I don’t want to leave you. But even the longest night of the year must end. And this is not the longest night; not yet.”

Celia, who had been floating up the blocks from 59th Street on a cloud of music, came to earth with a painful thump. The night hadn’t seemed very long to her, and she didn’t want it to end. But she couldn’t think of anything to say except, “When will I see you again?” which was supposed to be what he said next.

“I am playing tomorrow night,” he said. “In the Village. It’s a rehearsal, not a performance, and the music is mostly instrumental. You could come if you wanted.”

It wasn’t exactly getting down on one knee, and Celia found herself thinking of all the reasons she shouldn’t say yes. She didn’t want to look too eager, and when it came down to it, Valentine frightened her a little. He was so

very good-looking.

He folded her hands in his and kissed them. “Please say you will come.”

His dark eyes glittered, holding her gaze until the blood fizzed in her ears. If she said “No,” she suspected that he would not ask twice. And she did want to see him again. So, “Okay,” she said. “I guess so.”

Surprisingly, he laughed. Not so surprisingly, he bent his head and put his lips to hers. His kiss was soft and teasing, very unlike Guy’s business-like probing. When he released her, she was trembling.

“Eight o’clock,” he said. “I’ll wait for you on this corner. Good night.”

The next morning was depressingly ordinary. Celia rose late, but not late enough to escape her mother’s inquisition about the strange young man she’d been seen dancing with.

“Valentine? What kind of a name is Valentine? Who’s his father?”

“Mr. Carter, I guess, unless his mother’s remarried.”

Mrs. Townsend shut her eyes briefly, as if praying for patience. “Did you meet his parents, then?”

“I’m not planning to marry him, Mother, just date him.”

“How old is he?”

“I don’t know,” answered Celia truthfully. “Does it matter? He’s a perfect gentleman and he’s taking me to a concert tonight. A lute concert, not a rock concert.”

“The kind of concert is not the point, CeCee.”

“The point”—Celia was beginning to lose her temper—“the *point* is that I’m almost twenty and you’re still treating me like a baby. If I’d met him at college, I would have gone out with him and you wouldn’t even know.”

Her mother ignored this as irrelevant. “Where is this lute concert, dear? Lincoln Center? Carnegie Hall?”

“It’s in the Village.”

“No. Absolutely not. You can’t go down to the Village, not at night, not with some strange young man your father and I have never met. The subject is closed.”

Celia knew that tone of voice. It meant her mother had made up her mind, and nothing short of an act of Congress would make her change it. When she was in high school, Celia had wasted many hours and tears trying to break down that tone. But she was in college now, and she’d sung “Greensleeves” in the middle of Park Avenue. She knew the taste of romance, and she wasn’t about to let her mother take it away because it might not be good for her.

In a tone precisely matching her mother’s, she said,

“How strange could he be? I met him at the Snow Ball Debutante Cotillion. Look. I’m sorry you don’t like it, but I’m going out with him anyway.”

What do you wear to a rehearsal of Elizabethan music in the Village? Knowing nothing about actual musicians, and not much about the Village except that it was full of Hippies, Celia couldn’t decide. Not nice-girl dress-up clothes, that was for sure. In the end, she settled for a short green and purple paisley print dress with a high waist and wide sleeves. She wore fishnet stockings and high, lace-up boots with it, and her honey-brown hair brushed loose down her back. She was trying for a kind of mod-medieval effect, and when she looked in the mirror, she thought she’d succeeded.

At the apartment door, Celia’s mother approached her with a \$20 bill and instructions to take a taxi home.

“This doesn’t mean I approve of your decision, Celia. I just want to be sure you can leave the minute you feel you’re in over your head. I wish I had more faith in your judgment, but I suppose I should be grateful you’re not lying to me about where you’re going. I just hope this young man is worth it.”

So did Celia. All day, while her mother had tried every trick in her repertoire to make her change her mind,

she'd been dreaming about Valentine—his fine musician's hands, his dark poet's eyes, his earring, replaying his kiss like a favorite record until she'd worn out the grooves. Now, about to meet the reality at the corner of 83rd Street, she wondered whether she'd still like him, whether he'd still like her.

He was waiting where he'd said, dressed in black jeans, boots, and a black leather jacket, with a gold ring in his ear. He looked impossibly handsome and dangerous, a pirate king or a highwayman. "Celia," he said, lifted her hand, turned it palm-up, and kissed her wrist, just above the edge of her glove. Celia felt herself going scarlet.

"Very nice," he said. "Fair Janet, circa 1969, with her skirt more than a little above the knee." He picked up a large-bellied guitar case from the sidewalk at his feet. "Shall we take the subway?"

When they emerged from the subway at Astor Place, it became very clear to Celia that going to the Village to see *The Fantasticks* with her parents was nothing at all like walking down St. Mark's Place with someone who belonged there. The street was full of men with beards and dirty hair straggling over their shoulders and girls wearing Indian blankets and beaded head-bands across

their foreheads. The stores were full of fringed leather vests and bongos and rolling-papers laid out in colorful rows. Street stands sold strings of love beads and huge, dangly earrings and pewter Peace signs hung on leather thongs. Celia clung to Valentine's hand like a child, staring at the shifting, colorful scene, sniffing the sweet ghosts of incense and pot. Anything could happen here. Anything at all.

A couple of blocks east, Valentine opened a cast-iron gate, mounted the steps of a brownstone, pushed a paint-caked button. A buzzer screeched and he opened the door on a long hall with a worn wooden stair at the end. Celia sucked in a deep breath tinted with pot and cabbage and wondered if her floaty, slightly panicked feeling might be a contact high.

The apartment was on the third floor. As Celia and Valentine climbed the last steps a door opened, releasing a stream of warm, golden light like honey. An enormous guy with a beard and a furry vest took her coat and hung it up in the branches of a tree growing up inside the door. Curious, Celia touched its trunk. It was cold and hard—metal of some kind. There was another tree by the stove—the front door opened into the kitchen—with pots and pans hanging from its graceful branches, and a third shaded the bathtub (the *bathtub*?) occupying an alcove by

the sink. Groovy.

The bear-like man herded Valentine through a curtained door, leaving Celia to follow if she felt like it. He hadn't even asked her name. Celia squelched a sudden desire to use her mother's twenty: If she knew exactly what the rules were and what was going to happen next, it wouldn't be an adventure, right? If she ran away now, it would mean she was just the snotty little Upper East Side deb her mother wanted her to be. So she'd hang loose and keep her cool.

She could always run away later.

The room behind the curtain was as strange and beautiful as something from a fairy-tale. There were no sofas, but only large, soft cushions covered with richly printed fabrics, blue and green and rust and yellow like a blooming meadow. The walls were covered with more of the silver metal trees, hung with musical instruments—lutes, violins, a small harp carved with leaves—and little lanterns with candles in them. Clustered at the far end were five low stools, three of them occupied by a girl and two men. Valentine was standing in front of them, holding his instrument case across his chest like a shield.

“We missed you last night,” said the girl accusingly. She was easily as strange as the room: a pale, angular face, black eyes, eyebrows like accent marks, arms as

long and skinny as branches, fingers like white twigs. Her hair was dark, too, but it glimmered in the candlelight. Feeling as if she'd come in half-way through a play, Celia edged through the door and let the curtain fall.

Valentine shrugged. "There was no rehearsal called—I thought I'd take a night off."

"Nobody has a night off at Midwinter," said one of the men. He was fat, or maybe it was only that he looked fat sitting next to the skinny girl. He had a clever, craggy face and bright little eyes that twinkled out through his wildly curly hair like an animal peering through leaves.

The remaining man was relatively normal-looking, except for a glassy blue glare that made Celia think of basilisks. The air shimmered with tension and unspoken words.

"I'm here now." Valentine put down his case, unclasped it, lifted out a round-bellied lute, and took his place on a vacant stool. The twiggy girl picked up a lute with a neck nearly as long as she was tall and propped it in her lap, Blue Eyes tucked a violin into the hollow of his shoulder, Curly straddled something that looked like a miniature cello, and Big Bear screwed a recorder together. They all started tuning, their heads bent over their instruments as if in worship. The tension eased a notch or two. Celia wondered if anyone even knew she was there.

“And *one*,” said Twiggy.

As they plunged into the first piece, Celia forgot about leaving. She dove into the music and let it carry her with it as its notes tumbled over one another in a barely ordered chaos, like water over a dam. When the piece was over, Celia found herself breathing as though she’d been swimming in cold water. She was so happy she could hardly bear it.

The musicians exchanged satisfied looks.

“Far out,” said Twiggy. She stretched her arms, long and thin as spider’s legs. “That was good. Didn’t you think so?”

By the time Celia realized that she was being addressed, Twiggy had turned to Valentine. “Nice of you to bring an audience for us. It would have been better if you’d told us first, but now she’s here, you’d better ask her to sit down and offer her a beer or something. Otherwise, she might think you’re an insensitive jerk.”

Valentine put his chin up and tightened his mouth. “Apologies all around,” he said stiffly. “Pull up a cushion, C. Make yourself comfortable.”

“What about some wine?” Twiggy suggested. “We’ve got some rotgut in the fridge. Or some cheese, maybe? I don’t want to be inhospitable.”

Celia was about to say that wine sounded good when

Valentine broke in. “Later, okay? I mean, this is a rehearsal, isn’t it? So let’s rehearse.”

He sounded so angry—at Twiggy? At Celia?—that Celia wished that she’d listened to her mother. Except for the music, the evening was a total disaster. But the music rang in the silence it had left behind. She couldn’t possibly leave until she’d heard more. And she was damned if she was going to let them know they’d spooked her. As gracefully as she could, she sank into the nearest pile of cushions.

“Don’t mind me,” she said in her best Miss Debutante 1969 voice. “I can wait until you’ve done. I wanted to ask, though—what’s that instrument you’re playing?”

The woman ran her twiggy fingers up the long, slender neck. “It’s an arch-lute,” she said, in the patient tone of someone explaining the obvious. “Anything else you want to ask?”

Okay, Celia thought, be like that. I can be like that too. “Yes, as a matter of fact,” she said, and pointed to Curly’s miniature cello. “What’s that?”

“A viol da gamba,” Twiggy said. “Possibly the only one in New York.”

“Cool.” For Valentine’s benefit, Celia arranged a look of bright interest on her face. But Valentine was retuning

his lute. Lutes, Celia soon learned, take a lot of tuning.

The next set of tunes sounded like dance music, and included an instrumental setting of a song Celia had sung in Madrigals. She sang the lyrics under her breath until the melody lost itself in a series of increasingly complex variations and sent her into an enchanted place. It was as if the music drew her soul into her ears, pouring into it those glorious phrases, those trilling runs and intricate harmonies, each more marvelous than the last. Even the inevitable retuning couldn't break the spell. Celia just ran the last tune through her head until the next one came along and displaced it.

Eventually, Twiggy said, "I think it's time for something a little more challenging. What about that new thing? The Midwinter Pavane?"

Excited murmurs from Curly and Blue Eyes, silence from Big Bear. Valentine frowned, caught Twiggy's eye, shrugged, and retuned.

The Midwinter Pavane was dark and stately and full of repeating phrases tossed from strings to recorder and back again, turning on themselves like coiling snakes. After a few phrases, the recorder dropped out and the stringed instruments played on alone in a plangent scurry of notes and chords. Celia closed her eyes blissfully. Behind her lids, shadows spun and leaped like dancers

dressed in burgundy and gold and chestnut, then twirled vertiginously down towards a single, silent, lightless point.

Celia gasped and jerked upright, hoping no one had noticed her falling asleep. She needn't have worried. The consort were all watching Valentine, who was playing a solo. He sat with one ankle cocked up on the opposite knee, the lute held in his open lap with its long neck canted up past his head. The fingers of his left hand pranced along the frets, backing and bowing to his right hand, which skipped lightly across the strings. Watching him, all Celia wanted in the world was to come closer so that she could study the subtle play of the music over his face, like light over water. Blindly, she struggled out of her nest of cushions and knocked into a thing like an extra-large violin.

It made a small wooden complaint as it fell over, followed by an ominous twang. The music faltered to a halt.

“Shit!” Blue Eyes leapt from his stool. “Clumsy girl,” he snarled. “Can't you watch where you put your feet? This is a delicate instrument, a rare instrument—you have no idea how rare. If you've broken it, I'll . . .” He cradled the violin as if it were a cat Celia had just run over.

Tears of mortification pricked the back of Celia's

nose. “Don’t worry,” she said. “If it’s broken, I’ll pay for it.” The musicians stared at her, eyes blank. “I’ll write down my address so you can send me the bill,” Celia finished up awkwardly. “I guess I’ll be going now. I’m really sorry. The music was wonderful.”

She managed to keep back her tears until she was in the little kitchen, looking for her coat. It was pitch black, and she couldn’t find the light switch among the tree branches, or her coat, or the door. She swore tearfully and felt around the walls again. The sharp edges of the metal leaves nicked her fingers painfully. From the next room came the sound of voices, murmuring urgently.

The lights came up. Valentine was standing by the stove. “Don’t go,” he said.

Celia fished a handkerchief out of her purse and blew her nose with defiant force. “So now you want me to stay? Why should I? You left me standing in the middle of the floor like an idiot. You didn’t introduce me to anybody or explain anything to me. You didn’t even ask me if I wanted a glass of water.”

“I’m sorry,” he said, sounding as if he really was.

Celia was not mollified. “So you’re sorry. And I tell you it’s okay. Then what?”

He took her hand. His eyes were bright on hers and

she felt the phantom pressure of last night's kiss against her lips. She lowered her eyes to his loose white shirt and stared at it blindly.

“Stay,” he said softly. “We’re taking a break. I need to talk to you. Alone.”

He reached behind her and swept open a curtain Celia hadn't noticed before. Behind it was a polished wooden door, and behind that was another room. Celia tried to pretend she was calm while Valentine found a match and lit a candle. The small flame illuminated a wide platform bed with—surprise!—metal trees at the four corners of it, and a moss-green bedspread. Celia swallowed. *This is it, she thought. See Celia jump off the Empire State Building into a bucket of water.* Her heart went into a brisk drum-roll.

Valentine sat down on the bed and focused his gaze on her. “I’m in trouble,” he said.

It wasn't anything like what she'd expected him to say. She took a deep breath and tried to pull herself together. “What kind of trouble?”

“You won't believe me. Or maybe you will. I don't know. I thought you were the right one, but what do I know about you, after all?” He raked his hands through his hair and stared at her. “How do I know I can trust you?”

“*You’re* worried about trusting *me*?”

His voice was rough with desperation. “I have to trust someone. I need your help. You’re my only chance, and you hardly know me. It’s probably a stupid idea, but I’m out of time and I’m out of options.”

Things were moving a little fast, although not in the direction she’d feared. Or maybe this was his idea of a seduction. If so, she didn’t think much of his technique. On the other hand, he was so obviously bummed out, she couldn’t help feeling sorry for him. She needed time to think. She dredged around in her purse for her cigarettes and her lighter, pulled one out, and lit up.

Valentine jerked upright, wild-eyed as a frightened dog. “You can’t smoke that here,” he said. “They hate cigarettes.”

“*Who* hates cigarettes? What’s the story here? Hey!” He had leaned towards her, snatched the cigarette from her fingers and stubbed it out on the sole of his boot.

“That’s the catch,” he said. “I can’t tell you the story—not all of it. There’s a spell . . .” His mouth worked, his long hand waved the unlit cigarette helplessly. “Anyway, I can’t.”

The room was just big enough for the bed. No chair, no desk, no chest to sit on. Too curious to be self-conscious, Celia perched on the bed. “A spell? You’re

putting me on.”

Valentine started to shred the cigarette. “Tonight,” he said carefully, “is the longest night of the year. There’s a dance. At the end of the dance, there’s a ceremony”—his mouth worked—”of . . . payment. This year, I play the starring role.” He looked up from the mess of filter and tobacco on the polished floor, to her face, searching for understanding.

“That doesn’t give me a lot to go on,” Celia said.

Running his hands through his hair, he’d pulled it loose. Dark, curly strands hung over his eyes. “Last night, we sang together. Do you remember?”

““The Silver Swan,”” she said. ““Tam Lin.””

He stared at her unblinking.

“Tam Lin,” she said slowly, “is an earthly knight living in the fairie court. Every seventh year, the fairies have to give a soul to the Devil as tribute—that’s the tithe to Hell. Now, it’s Tam Lin’s turn. On Halloween night, Fair Janet rescues him by holding him in her arms while he turns into freaky stuff like bears and burning brands.” She stopped; he nodded encouragement. She said, “Are you trying to tell me you’re like Tam Lin? Are you the tithe to . . .”

“Shut up. Just shut up.”

His voice was ragged with pain. Celia wanted to put

her arms around him; possibly to comfort him, possibly to comfort herself. She wasn't sure whether the turmoil in her stomach was fear or excitement. She wanted to believe him—she did believe him—but a couple of things bothered her.

“It's not Halloween,” she said.

“Midwinter Night is the longest night of the year.”

“Janet got instructions.”

“So she did.”

“Which is why you can't tell me what to do.”

For the first time, he smiled at her. “I knew you were bright,” he said.

It was excitement. Definitely excitement. This was, no kidding, the best thing that had ever happened to her. “Do I get hints?”

He turned serious again. “Trust your ears, not your eyes.”

“That's it?”

He nodded silently. His face was very still. Celia edged closer and put her hand on his. “I'll do my best,” she said.

“I know you will, Celia.”

In his mouth, her name was an invocation, a declaration, a caress. She'd never heard anyone speak her name like that before. She made the only response she

could think of. She kissed him.

It went further than that, of course. Quite a bit further, in fact, but not as far as Janet had gone with Tam Lin. Part of Celia really wanted to go all the way, more than she'd ever wanted anything, and the hell with the consequences. Another part, however, spoke to her in her mother's voice, more sorrowful than angry, of pregnancy and disease and lost self-respect. She tried to ignore it, but it took enough of the enthusiasm out of her kissing that Valentine noticed and drew his mouth away from hers.

Celia felt relieved, frustrated, humiliated, and several other emotions she couldn't put a name to. "Sorry," she muttered.

"No," he said unexpectedly. "It would not be right, not tonight." He sighed and sat up against the pillows. "Your kisses are very sweet, Celia. And so are you."

Celia smiled at him. She wanted to say something suitably wise and flirtatious, but the bed was incredibly soft and cozy and her eyes heavy.

"One more thing," his voice said, warm and low in her ear. "Things are not as they seem."

"Not as they seem," she murmured. "Got it." And then she was asleep.

Celia woke shivering with cold. The candle had either burned or been blown out. The bed beside her was empty. Her feet were freezing.

She couldn't find the matches or the candle or her boots. She was a little fuzzy on where she was and what she had to do, but she remembered that it had something to do with Valentine, and it was important, so she hauled herself out of the bed and groped through the darkness, looking for a door.

She didn't find a door, but eventually, she found herself in a long, paneled corridor, with a rumor of torchlight and lutesong at the far end. Celia padded forward. Golden light and heat swelled towards her and a rhythmical pounding below the music's cheerful havoc.

Six steps short of the corridor's end, Celia stopped dead. It was all coming back to her: the rehearsal, the music, the sweetness of kissing Valentine, the pain of stopping. And she remembered that he'd asked her to reclaim him to the human world just as Janet had reclaimed Tam Lin.

But it wasn't just the same, was it? This wasn't like the ballad, not at all. Celia hadn't plucked a forbidden rose as Janet had, or gone looking for a thrill in a forbidden castle. Valentine had come to the ball looking for her. And he hadn't claimed her virginity as Tam Lin

had Janet's—he'd been a perfect gentleman. So how could Celia trust that what had worked for Janet—desperate, pregnant, madly (presumably) in love—would work for Celia? And what would happen to her if it didn't?

That was the question, wasn't it? Why should she risk being turned into a frog or worse for a man she barely knew? Well, Celia answered herself, because she might love him, if she got the chance. And because she'd promised she would, and promises meant something to her. But most of all because she'd regret it the rest of her life if she turned back now. What was the good of dreaming of adventure if you turned your back on the first one that came your way?

Feeling a lot more nervous than she had before her curtsy to Society, Celia Townsend wiped her sweating palms down the purple paisley skirt of her minidress and stepped out of the dark corridor into the soft blaze of torches.

Standing just inside the door, she tried to make sense of the kaleidoscope of colors and shapes unfolding before her. It was a dance, of course, a dance as enchanted as the Snow Ball was dull. Hundreds of brightly-dressed figures leapt, bowed, and pranced in perfect time to the music of two lutes, a violin, a viol da gamba and a recorder. Every

gesture was graceful, every step was light and self-assured. And the clothes! Celia had an impression of velvet and chiffon in rich colors—gold and burgundy and deep blue—and long hair piled high or braided with beads and flowers and shells. The men were as showy as the women, with lacy cuffs and beaded vests and ribbons plaited into their beards and hair.

The music was familiar—a dance-tune the Book of Ayres had been rehearsing. Celia took a timid step forward to try and get a look at the band. A dark figure stepped out of the dance, put a fist over its heart, and bowed. Celia looked up at Valentine. He had combed his hair, she noticed, and put on a dark Nehru jacket. “Are we in Elfland?” she asked.

He seemed amused. “We’re not in Poughkeepsie,” he said, and held out his hand to her, just as he had at the Snow Ball. “Come now, and dance.”

Celia hung back. Thinking about him and seeing him were two different things. Just now, she was mostly aware that she was on the verge of a desperate and probably dangerous adventure. She expected him to act at least as if he was aware of what she was going to do for him. Instead, here he was, cool as a Sno-Cone, asking her to dance as if nothing had happened.

“Don’t be shy, sweet heart,” he said impatiently.

Remembering how desperate he'd been, in the little room with the bed and the trees, how frightened, and then how tender, Celia couldn't help wondering whether he'd been faking her out. Then she noticed that his outstretched hand was trembling. Of course. He was afraid, and he wasn't going to show it, or anything else, in front of his enemies. He knew the rules here; she didn't. If he wanted her to dance, she'd dance.

Celia laid her fingers on his, and allowed herself to be drawn onto the floor.

They'd hardly taken a step before a new partner claimed her. To her dismay, Celia found herself moving lightly through the complex pattern, changing partners with each measure. Close up, the dancers were even more beautiful than she'd realized, and far stranger. Celia was passed from a boy whose hair clustered like grapes beneath a wreath of leaves to a little dark woman with surprised, golden eyes. As they spun together in the center of a weaving circle, little stars and moons poured from the skirts of her dress to surround them in a coruscating cloud that dispersed when the woman handed her off.

If Celia could have stopped dancing, she would have. Like a girl's in a fairy tale, her feet seemed to have taken on a life of their own, moving her flawlessly through the complex measures of a dance she'd never seen before.

Whether she wanted to or not, she had to dance. Even if she was frightened, even if her feet hurt, even if she'd lost sight of Valentine, she had to dance.

Celia's feet skipped her through a winding chain of dancers—left hand, right hand, left hand, right hand—round to Valentine again. She clamped her fingers around his wrist.

“Don't worry,” she said. “I've got you now. And I won't let go.”

Valentine laughed and changed into a woman with a silver-gilt fall of hair and eyes like golden coins. “You can save him,” the woman said happily, “if you can find him.”

There were Valentines, suddenly, everywhere Celia looked—bowing, prancing, tossing their partners in the air or spinning them by the waist. Each was dressed differently: velvet jacket, torn denim, ruffled shirt, jeans, turtleneck. One wore nothing at all but his own tossing curls.

Celia had hardly had time to register the sudden excess of Valentines when a tiny man with a single horn growing from his forehead grabbed her hand and forced her through a complicated set of twirls and turns that left her dizzy and panting. Her feet, still enthusiastically tripping the measure, were bruised and tender. Maybe if

she just gave up, she thought, they'd let her stop dancing and go home. Valentine wasn't really her boyfriend, was he? Where did he get off, expecting her to rescue him just because he was cute and needed her to? Serve him right if she just let him go to Hell.

A woman made of flowers passed Celia to one of the Valentines, this one with a ruby swinging from his ear. Unlike the first Valentine, this one did not look as if he were enjoying himself. He looked like a whipped dog, and his dark eyes begged Celia to save him. It was impossible to be mad when he looked at her like that, impossible to condemn him just because he'd taken advantage of her. Which he hadn't even done, because she'd kissed him first. She'd come here to rescue him, and she would.

If only she could figure out which of him to rescue.

Someone was riffing on the lute, chasing up and down through the scales, leaving a shimmer like gold on the air. "Trust your ears, not your eyes." Okay. Think. All the dancing Valentines looked like Valentine. But they couldn't be. Why not? Because if Valentine was dancing, who was playing the lute?

The movement of the dance hadn't brought Celia to the front of the room, where the musicians were—or if it had, she'd been too busy being passed around like a

basketball to notice. Now she focused her attention towards the music, peering through the shifting mass of dancers, leaving her feet and her partners to look after her place in the pattern. It *was* the Book of Ayres, just as she'd thought: Twiggy, Curly, Blue Eyes, and Big Bear. And Valentine. So simple, really, now she'd figured it out. All she had to do was dance her way to the front, jump on Valentine and hold on no matter what happened. Piece of cake.

Choosing her own path through the dance was all but impossible. Since basketballs have very little choice about what part of the court they're in, finally, it was more chance than intention that brought her close to the raised platform where Valentine sat, fingers dancing frantically over the long neck of his lute.

With the desperate sense that it was now or never, Celia tore herself out of her partner's arms and ran for the platform. No one looked at her or tried to stop her. Valentine's dark head was bent over his lute's round body. Its exaggeratedly long neck towered over him, threatening Blue Eyes' bow arm.

Celia veered towards the other lutenist. Twiggy's lute was short-necked. No time to look carefully, no time to work out the possible layers and levels of illusion. Praying she had guessed right, Celia leaped onto the stage

and threw her arms around Twiggy, lute and all.

Nothing happened. Celia had time to wonder if she'd blown it, chosen someone who didn't need saving, and what would happen to her if she had? Would she be stuck dancing here forever? Get turned into a metal tree, or maybe get sent to Hell herself the next time the fairy folk needed a substitute?

Then the air shivered, and Celia was holding a dog, a German Shepherd. Its hackles were up, its teeth were bared, and it was growling.

Celia liked dogs, even big dogs, but she preferred to make friends with them gradually, and at a distance. The German Shepherd was pressed tight against her chest. It twisted back its neck and snapped at her. Sobbing with fear, Celia fought the instinct that would have snatched her hands away from its teeth and held on. Incredibly, the white teeth bit air. Celia buried her face in the dog's fur. Things are not what they seem. This dog was really Valentine, wasn't it? And Valentine wouldn't hurt her. All she had to do was hold on, and everything would come out okay.

But snakes aren't easy to hold on to. There's a lot of them to hold, and they're very muscular. One end keeps slashing at your back, and the other threatens you with a gaping mouth furnished with foot-long fangs. They were

dripping venom, too. Celia screamed, but she didn't let go. If the dog hadn't bitten her, the snake wouldn't either. She hoped. How many transformations had Janet endured? Three, in the version she knew. In Valentine's version, the dog had been followed by a snake, a lion, a bear, and a burning brand.

She was almost looking forward to the lion.

There was no lion. What there was instead was a huge rat, with incisors the color of butter, a tail like a whip, scratching pink paws, and a slick coat of coarse fur. It stank like a sewer, and its eyes were red and mad.

Celia closed her eyes again, gritted her teeth, and hung on. Three. Her version, or Valentine's?

For a second, she thought she was done, because there was a man in her arms. But the eyes she encountered when she opened her own were rheumy and red-rimmed, with yellowish whites. The skin around them was gray with ground-in dirt, the hair matted, the cheeks unshaved. The man she embraced smelled worse than the rat, of old sweat and old drink and new vomit. Celia came very near to adding to that smell, and nearer still to opening her arms and getting away from him as fast as she could scramble.

It's just an illusion, she told herself. It's really Valentine. After the first shock, it's not so bad. Only one

more to go. Maybe.

Her arms were full of leaves and twigs. And thorns, sharp ones, pricking deep into her wrists, face, and breasts. Pain, Celia found, was harder to resist than fear or disgust. It was all she could do to keep her arms firm around the slippery, prickly mass. She couldn't tighten her grip; it hurt too much.

Something wet trickled down from her temple to the corner of her eye: sweat, maybe, or blood. It stung. Celia blinked furiously and hung on. She didn't even know what she was holding any more, or why. She was just holding, and waiting for it to be over.

A familiar voice said, "Celia."

She had her face against his chest and her arms were pinning his arms to his side. He was naked and shivering. She loosened her hold just enough to get a good look at him. Valentine. He looked as sick as she felt, pale as a dead fish, and his dark curls very nearly as matted as the bum's. His face was wet with tears.

Celia raised her hand to wipe them away. "I don't have a cloak to cover you," she said, her voice shaking.

"I don't mind," he said.

At that point, Twiggy, back in her own shape again, began to swear a blue streak.

It was pretty imaginative, as swearing goes, sexual

and scatological and highly insulting to humans in general and musicians in particular. Listening, Celia realized just how sheltered her life had been. She'd never imagined that simple bad language could be so absolutely ugly. But ugly was all it was. There was nothing worse Twiggy could do to them, now, than hurl nasty words at them. She was beaten.

Finally, she ran dry. She shook back her glimmering hair and drew herself upright, like a slender tree. "Very well," she said to Valentine. "You win. I knew you'd find some way out of it. I should have guessed you hadn't lured her here to take your place. Now one of us will have to. We don't get out of the deal, you know, when the designated fall-guy gets rescued."

Valentine shrugged. "It's your deal. You honor it."

Twiggy looked as if she was going to start swearing again. Instead she said, "If I'd known what your promises were worth, Valentine Carter, I'd never have taught you to play the lute."

"But you didn't know," Valentine said. "And the promise was forced from me."

"I'd like to cut off your hands," said Twiggy coldly. "But I've got more pressing things to do. Now, get out."

It's hard to make a dignified exit when your feet are killing you and your companion is stark naked. Celia

didn't care much about dignity at this point. She was willing to crawl from the room if her swollen feet and aching legs wouldn't carry her. But Valentine picked her up, staggering a little, and walked stolidly through the crowd with her in his arms. They must have looked ridiculous, but nobody was laughing.

It wasn't over at all, Celia realized, not for the dancers. The little one-horned man caught her eye and bowed to her. The little woman with the stars in her dress gave her a sad smile. Tears rose to Celia's eyes.

"I know," Valentine said. "I'm sorry for them, too—but not enough to burn in Hell for them."

It seemed like a long walk back to the bedroom. Celia clung to Valentine's neck and tried not to cry. She might be a heroine, but she didn't feel like one. She hurt all over and was tired beyond belief. And when she got home, her mother would kill her.

The bedroom looked different—dirty and bare except for a mattress and a pile of clothes: Valentine's white shirt and black jeans; Celia's boots and fishnet stockings. Valentine lowered Celia onto the mattress with a groan. Their eyes caught and shied away from one another. Celia felt her face heat. She decided against putting on the stockings, and grimly began to work her feet into the

boots. Miraculously, they weren't too swollen to fit. In fact, they were fine. The scratches from the thorns were gone, too.

“Celia?” Valentine had dressed and pulled back his hair, but he still looked pretty grotty. Celia suspected she didn't look a whole lot better. And it didn't matter anyway, did it, how they looked? Trust your ears, not your eyes. Yeah.

“What?” It came out sharp and impatient.

Valentine lifted his chin in a familiar gesture. “I just wanted to tell you that I love you. You're smart and you're brave and you're beautiful. You saved me.” He took her unresisting hands in his. “I want to marry you.”

The end of the fairy tale indeed, as pat and easy as “And they lived happily ever after.” Celia felt a huge, warm emotion rise in her, swelling from the pit of her stomach to her throat and head, so that she was sick and dizzy with it. It might have been love and joy and surrender. If it was, Celia wasn't at all sure she liked it. “I hardly know you,” she objected.

“I don't understand,” Valentine said. “You saved me. You risked you didn't even know what danger to save me. How could you not love me?”

“I did it because it wasn't fair for you to go to Hell when it wasn't even your bargain. And it was an

adventure.”

“I thought you loved me.”

“I might. I just met you. I don’t know.”

She’d left her hands in his, which might be significant, but was likely to be just inertia. He looked hurt and bewildered and exhausted.

“Look,” she said. “I really can’t talk about this right now. Do you have someplace to go?”

He shrugged. “This is where I’ve been staying. Here, and that other place.”

“Not a good idea. What if Twiggy gets second thoughts?”

“Twiggy?” That astonished a laugh out of him. “You think of her as *Twiggy*?” He threw his arms around her. “I do love you, Celia. You’re—I don’t even know what you are. I’ve never met anyone like you.”

She hugged him back, kissed him on his cheek (he needed a shave) and disengaged herself. “Believe me, I’ve never met anyone like you either. This isn’t balladland, Valentine. It’s New York, December 1969. And it’s really late and I’ve got to go home and face my parents. They didn’t want me to come tonight. It’s not going to be pretty.” She opened her purse, took out all her money, including her mother’s twenty, and gave it to him, all but a subway token and a dime for a phone call. “Here,” she

said. “It might be enough for a room at the Y. I don’t really know. Call me around noon, and I’ll meet you somewhere. Down here. I think I might like the Village—the human part of it, that is. The same with you. I need to see you both in the light of day.”

His chin was up again. “I’m not used to begging.”

“Fine.” She was at the end of her tether. “So don’t call me.” She crumpled up the slip of paper on which she’d scribbled her phone number and dropped it on the floor. He picked it up.

“I’m sorry,” he said. “I’m not used to being human. It’s been a while.”

“How long? Never mind, you can tell me tomorrow. I can’t take any more wonders.”

He kissed her when they parted, a shy, courting kind of kiss. Celia was too tired to care what kind of kiss it was. The crowds were just as thick as they had been earlier, and it was late—very late indeed. Whatever was going to happen at the ball had probably happened by now, and Twiggy, a.k.a. the Fairy Queen, was plucking away on her arch-lute while her subjects danced their sorrow and fear away. And Celia was on her way home to get reamed out by her parents. It didn’t seem nearly as scary as it ought to. Maybe it was being tired. Maybe it was

knowing that her parents were human, and cared for her. Or perhaps it was knowing that she'd followed her heart and her instincts and had brought Valentine back to the human world. Whatever happened next, she had a good chance, she thought, of living happily ever after.

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Delia Sherman's most recent short stories have appeared in the young adult anthology *Steampunk!* and in Ellen Datlow's *Naked City*. Her novels for younger readers are *Changeling*, *The Magic Mirror of the Mermaid Queen*, and *The Freedom Maze*, a time-travel historical about ante-bellum Louisiana which recently won the Andre Norton Award. When she's not writing, she's teaching, editing, knitting, and cooking. She loves to travel, but when not on the road, she lives in a rambling apartment in New York City with partner Ellen Kushner and far too many pieces of paper.

A Moment Before It Struck

Linda Nagata

He felt death coming a moment before it struck.

In the lingering gray twilight, Smoke lay on his bedding, eyes not quite closed and mind adrift, only half-aware of the sounds of the encampment around him: steel on whetstone, the rattle of dice, a soft song, and loud bragging. The soldiers huddled together under a tent canopy raised against a misty summer rain. From the mountains in the north there came a sound of distant thunder.

When they'd settled in, Ekemion had invited him to play a game of dice, which he usually enjoyed, but this time he'd declined with a sheepish grin. "I don't have my coin purse. It's gone."

"Again?" Ekemion demanded, incredulous. "Smoke, that's three times now."

Smoke shrugged. He was just seventeen, tall and lean, with honey-brown hair that he'd left loose around his shoulders after washing it clean of soot and Lutawan blood. His green eyes glittered with their own light as evening shadows gathered. "Fresh coin is easy enough to come by." In the aftermath of battle, they gathered it from

the dead.

“You won’t find any Lutawans to kill tonight,” Ekemion said, reaching into his pocket. “So I’ll give you some of my own coin to play with.”

Smoke arched an eyebrow. “And then complain when I win the rest of it? No. I’ll play another time.”

So Smoke lay alone at the edge of the canopy, his sword in its scabbard cradled in his arm, and the misty rain sometimes wandering in to cool his face of the summer’s heat.

The war had been ongoing for generations, pushed by the Lutawans, whose king was resolved to overrun the Puzzle Lands, and enslave the Koráyos people. Smoke had been sent to war the summer before, when he was sixteen. His demon nature let him slaughter the men of Lutawa with no remorse—and often with pleasure—but whether he liked it or not, it was his duty to fight.

That night his thoughts drifted as he listened to a whispering, pleading murmur of prayers spoken in voices no one else could hear: the voices of women from the borderlands of Lutawa whose lives had grown unbearable.

Lutawa was a vast land, strange and twisted, where women were kept as slaves and traded like coin, and if they protested, their protests were soon silenced, but their

hearts still simmered and sometimes overflowed. Then they called to him in prayer: *Come, come avenge me.*

It was in his demon nature that he could hear them.

On the far side of the tent, Dehan the Trenchant spoke strategy with Chieftain Rennish. His murmured words should have been impossible to pick out past the conversation of the soldiers, but Smoke's senses were acute, and when Dehan's voice grew softer still, the shift caught his notice. "And what of my demon son?" Dehan asked Rennish, his distaste plain. "Does he still serve you well? Is he true to his murderous nature?"

Rennish hissed. She was commander of the irregulars, the stealth troop that slipped like ghosts deep into the Borderlands, striking without warning against Lutawan soldiers and any farmers and villagers who supported them. "His sword is chipped and dull from use. Be wary, Dehan, if he ever turns against you."

Dehan's chuckle was easy. "He's a flawed creature, but he's still Bidden. He exists to serve the Koráyos people as all the Bidden do. There is nothing else for him."

A torch was lit. Its red flame glistened against Smoke's eyelashes as he allowed himself to be lulled again by the prayers for vengeance that whispered in his mind. The Trenchant Dehan didn't know he heard the

prayers; no one did. It wasn't Smoke's way to reveal what could be hidden. Later tonight, when the Trenchant had returned to the army's main encampment, and the other soldiers in his troop had given in to sleep, then Smoke would slip away to answer one of the prayers, or maybe two.

Avenge me.

So many prayers, he could never answer them all, but their bloody need entranced him—so much, that he didn't sense death's approach until a taut, quivering hate rushed in upon him along the threads of structure that underlay the world.

His eyes opened.

From the misty twilight outside the tent a glint of steel flashed. His hand closed over his scabbard, and as the knife slashed toward his chest he dissolved into a swirl of gray vapor, sliding away from death along the threads that made up the weft and warp of the world-beneath—for that was his nature, a spirit creature who could take a man's solid form.

The knife struck the mat where he had been. His assailant made a low cry of shock and drew back, stumbling away into darkness while Smoke took a man's form again, standing poised at the edge of the tent. Ripping his sword from its scabbard he thrust into

shadows, feeling the shape of his quarry in the threads. Only as he did so did he realize she was a woman and that she was not alone. His own sister, Takis, stood beside her.

“Smoke, *no!*” Takis shouted—too late.

The tip of his blade dived toward the woman’s heart, and as it struck her, a bolt of lightning shot across the sky. Its flickering light caught on the edge of a glittering knife that flew out of the woman’s hand, and revealed to Smoke her familiar face, marked with a dagger-shaped stain on her right cheek.

Thunder slammed down on the camp, demolishing any further protest from Takis and leaving Smoke with ringing ears.

Behind him, someone brought a torch. Its ruddy light fell across a woman coiled in the wet grass: the young wife of a Lutawan farmer, dressed in the same simple skirt and blouse she’d worn that morning when the irregulars had stormed her home and Smoke had slaughtered her husband. He stared at her in astonishment. He’d struck her hard and her shoulders jerked as she fought for breath, but she wasn’t bleeding. A coin purse hung on a string around her neck. The coins in it had stopped the sword from piercing her heart. She’d been knocked down, her breath knocked away, that was

all.

Takis reacted first, drawing her own sword, holding it lightly in her experienced hand, her gaze fixed on the fallen woman. She wore brown trousers, a neatly tailored tunic, fine boots, and an etched leather jerkin. Full black hair framed a stern face that reflected her experience on the battlefield. Ten years older than Smoke, she was used to command and would become Trenchant, charged with the defense of the Puzzle Lands, when their father Dehan passed from the world.

“Takis,” Smoke said to her in wonder, “did you see it? The Dread Hammer wouldn’t let me kill her.”

The Lutawan woman struggled to her knees, though she remained hunched over her bruised chest.

Takis turned to Smoke, her head cocked and her gaze suspicious. “She was found by a patrol and brought to me, just another Lutawan woman seeking sanctuary in the Puzzle Lands. So I thought. Then I saw she carries your coin purse, the one I gave you after you lost the other. When I asked how she got it, she begged for a chance to return it to you.”

Long ago, the people of the Puzzle Lands had prayed to the Dread Hammer for aid against the cruelties of the Lutawan king. A forest spirit named Koráy heard their

prayers and felt bidden to answer them. She devised many spells in defense of the Puzzle Lands, not least that her partly human descendants, who were called the Bidden, would always be bound to serve the Koráyos people.

Smoke was more a spirit creature than any of his Bidden kin. He alone could slide into the world-beneath and ride the threads as Koráy used to do, traversing the land with the speed of the wind . . . and appearing out of nowhere among the enemy—an ability that made him most useful to Chieftain Rennish.

On that morning, very early, Smoke had ridden with the irregulars, following Rennish deep into the Borderlands. As dawn's first flush brightened the eastern sky, their patrol had stood ready to attack a farmhouse where a troop of Lutawan soldiers had been quartered for the night.

The Koráyos had let it be known that they would kill any farmer who sold food to Lutawan soldiers or gave them shelter, while the Lutawans had promised to kill any farmer who did not. It was a bad time to be a farmer in the Borderlands and many had fled south. More should have.

Smoke had gone in first as he always did, the only sign of his coming a plume of gray vapor that went unnoticed even by the farmer's dogs. He materialized in

the farmhouse, to find the soldiers there still asleep, six on the kitchen floor and nine more in the sitting room. Only a faint light seeped through the shutters. Outside, a single man kept watch, his footsteps a slow rhythm as he paced the porch. Smoke stood in the doorway between the two rooms, his sword in hand, listening. When his keen hearing picked out a distant rumble of hooves, he knew the rest of the irregulars would soon arrive. So he set to work.

He saw well in the dark, and his first stroke neatly removed the head of one of the sleepers in the sitting room. There was no outcry, only the thump of the sword and wet splatter of blood against the walls. His next stroke opened the throat of a man who had just begun to rise, and then he cut down two more before the others were sufficiently awake to arm themselves. When the Koráyos irregulars kicked in the door, Smoke turned to vapor again and moved into the backrooms, where he found two men scrambling to escape through a window. By their look and their plain clothing these were the farmers—not that it mattered to him.

As they vaulted from the window, he reached for the threads, passing as vapor through the wall. Behind the house was a grassy farmyard overrun with worried geese and chickens. Two sheds squatted beside a stable, with

several cow pens close by. Farther out, a grove of broad-leaved trees, no doubt kept for firewood, stood dark against a brightening sky.

Smoke materialized in the middle of the yard, right in front of the farmers as they ran. Two strokes of his sword put them on the ground and then he turned to see if there might be another that he'd missed.

That's when he saw her standing in the half-light: a young woman, younger than him, with what would have been a strong, comely face, except that her left eye was blackened, her lips were swollen and bruised, and on her cheek, a dagger-shaped mark branded her skin with a color like half-dried blood. Despite this evidence of a recent beating, she was dressed neatly in a pale linen blouse and a full skirt that reached her knees, with her heavy, dark hair pulled back and tied behind her neck. Dust covered her bare feet, but triumph gleamed in her eyes as she looked at the two men bleeding out at Smoke's feet.

Too soon, a horse came cantering around the farmhouse, carrying Chieftain Rennish on its back. She held in her hand a burning torch that trailed an ugly gyre of black smoke. The young Lutawan woman fled.

Smoke waited several beats of his racing heart to see where she would go. If she made for the fields, he'd let

Rennish ride her down—but somehow she knew better. Holding her skirt above her knees, she sprinted hard for the shelter of the stable.

Smoke grinned. “I’ll take care of her!”

Rennish looked at him with a suspicious gaze, and Smoke knew at once what was on her mind. Koráyos soldiers were merciless when it came to dispensing death, and in these raids the Trenchant had ordered that no one be spared—men, women, children—all must be slaughtered, and the buildings and fields burned. Rennish would see to that, but like all Koráyos women, she would not tolerate rape.

Smoke bared his teeth, offended at her suspicion. She just shrugged—”Take this, then”— and tossed him the torch. He caught it. With his bloody sword in one hand and the torch in the other, he strode across the farmyard, a flock of confused chickens fleeing before him.

Dawn’s light had not yet found its way into the stable, but the torch’s uneven flame cast a bloody glow on two plow horses. They tossed their heads and snorted, circling in their stalls. The young Lutawan woman stood beside the farthest stall. The mark on her cheek soaked up shadow, looking darker, grimmer, as she faced Smoke with defiant eyes. “I know who you are, death spirit! I have heard the stories, and I prayed for you to come

avenge me, but you would not.”

Her words were an accusation, and they drew from Smoke a fierce scowl. His eyes glittered green despite the torch’s red light. “Your vengeance is done, I think.”

“Only because I invited the Lutawan soldiers to my husband’s house.”

That caught him by surprise. “You wanted the Koráyos to come? You had to know we would kill you too.”

Her shoulders jumped in an angry shrug. “Sometimes there is mercy.”

Smoke eyed her bruised face. “Your husband . . . he beat you when you brought the soldiers home?”

“That’s nothing,” she sneered.

“Did he brand you too?”

Her hand shot to her cheek, gingerly touching the dagger-shaped mark. “I was born with this. But my daughter . . . she was born with a worse mark. He called her cursed and he took her away from me. He took her away! He strangled her. I know he did. If she’d been a boy, he would have let her live.”

Smoke had heard such stories before. He turned to touch the torch to dry hay piled in a manger that was shared between the stalls. Flames crackled and the young wife backed away, looking frightened at last, while the

horses threw back their heads and whinnied in panic.

“Open the stalls,” he told her.

With shaking hands she did it and the horses bolted free. Very quickly the fire consumed the hay and then turned its greedy flames to the stalls and the post that held up the ceiling. Gray smoke boiled up, sending small birds fleeing from the rafters. The air became thick and she raised her arm to cover her mouth and nose.

Smoke took his coin purse from his pocket, tossing it to her. She caught it. “They’re all dead now,” he told her. “Just as you wished. You’re free to go north. Maybe you’ll find your way to the Puzzle Lands.”

“I have to find my sister first. She was outside with me, but she ran to hide.”

The fire spoke in a windy voice, but over its dull roar Smoke heard the rhythm of hooves galloping up to the stable. “Smoke!” Rennish shouted. “Don’t toy with her. Finish it now!”

“Go!” Smoke gestured at the windows in back of the stalls, their shutters open to the summer dawn. “Flee to the woods. If you’re seen, you will be killed.”

“I have to find my sister.”

“There are twenty Koráyos soldiers outside. Your sister is dead. Go now, before you die too.”

He wanted her to live, but he would kill her if he had

to, if Rennish started to come in. Maybe she saw it in the green glitter of his eyes, because she moved at last, lunging for the closest window.

Smoke walked outside, igniting more hay on the way.

The farmhouse had been set afire, the cattle let out of their pens. Several of the Koráyos soldiers were working to pile brush and hay around barrels stacked beside a shed when one yelped, “Look! Another one!”

The barrels tumbled, a girl screamed. Two swords flashed in the dawn light, and the screaming stopped. Smoke tensed, reaching out along the threads, seeking for the farm wife while Rennish glared down at him from the saddle. “By Koráy!” she swore. “Didn’t you sense another one here?”

In truth he had not or he would have tried to spare her too. “I was distracted,” he growled. He took a cloth from his pocket to clean the blade of his sword, thinking on the woman he had saved. The threads told him she remained safe, crouched in the brush behind the stable.

He looked up again at the sound of running footsteps. Ekemion came, blood on his face and horror in his eyes at the murder he’d just done. “Chieftain Rennish, the one we killed, she cried out for her sister.”

Smoke shoved his sword into his back scabbard. “I took care of her.”

The sun's arc had just broken the horizon when their troop rode away from the farm. In all the long day since, Smoke hadn't thought of the woman again. Her bloody prayer had been granted and it was over—but not for her. She must have walked without respite to reach the Koráyos encampment in just one day, driven to find him, the knife and the coin purse her last possessions.

More lightning flickered in the night, though now it was far away. The misty rain faltered, then ceased altogether, leaving everything outside the tent damp and glistening in the torchlight: the grass, the brush, the two silver coins that had spilled from the purse.

The Lutawan farm wife got onto her feet, but she was hurting. She stood hunched, wheezing for breath, her hateful gaze bright above the dagger-shaped mark on her cheek as she glared at Smoke.

Chieftain Rennish stepped up beside him. “You said you took care of her.”

“I thought I did.”

A shadow eclipsed the torchlight. Smoke recoiled as Dehan the Trenchant came to stand at his other side. The Trenchant was a powerful man, both in the world and in the world-beneath. His years showed in his weathered face and in the gray that ran through his heavy black hair, but he remained strong and vital—and the venom that

had always existed between them remained vital too. It made Smoke's skin crawl, to be standing so close beside him.

“Who is she?” Dehan asked.

“A Lutawan. I don't know her name.”

Rennish expanded on this. “She was one of the women at the farmhouse we visited this morning.”

“Ah,” Dehan said. “Then she should be dead now.”

The woman had hung the coin purse on a string around her neck. Her lips drew back in contempt as she yanked it off. Her scorn was all for Smoke. “You lied about my sister and then you let her die. I don't want your coins—they won't buy back her life!”

She hurled the purse at his face, and out of instinct he caught it before it hit, snatching it from the air with his free hand. It had a slit in it, made by the tip of his sword, and as he stuffed the purse into his pocket a coin slipped out and fell, sparkling, to the wet, trampled grass.

Dehan glanced down at it, then up at the woman. “What favor have you done for my demon son that he defied me and let you live?”

“I have done him no favors! And the favor he did for me is worse than nothing.”

“Your life is less than nothing?” Takis asked.

“My life without my sister? Yes.”

Dehan looked to Takis. “Mercy is not in his nature. Why did he let her live?”

Though Takis and Dehan saw eye-to-eye on most things, on the subject of Smoke she was at odds with her father. “He’s standing there beside you,” she said acidly. “Why don’t you ask him?”

So the Trenchant turned to Smoke, his brow cocked in question. Smoke’s grip tightened on the hilt of his sword. Far safer to keep silent—so why did he hear his own voice speaking unforgivable words? “I don’t care for it—the killing of these women and children. They are not the enemy.”

Thunder rumbled in the north, a growling threat that went on for many heartbeats. Dehan waited until it died away before he answered, his voice reduced to hardly more than a whisper by his fury. “You presume to judge our strategy? You, who have been a soldier for all of a year?”

“It’s just they have no choice in their lives. They’re slaves, just as we were before Koráy came.”

“What of it? You have no choice in *your* life.”

Smoke scowled. That wasn’t true. He made choices all the time: to answer the prayers or not, to spare a woman during the raids . . . or not. To his father he said, “I choose to serve you.”

“That’s not a choice. It’s your role. Koráy made it so when she bound us to the Koráyos people. If you betray those bonds, you betray yourself. Then there will be nothing left of you, my demon son, and you will cease to be.”

Could this be true? Smoke looked to Takis for confirmation, and was startled when she nodded.

Dehan recalled his attention with another question. “How many others have you let escape?”

“I don’t count them.”

Dehan shook his head. “You pretend at mercy, but it doesn’t suit you.” He gestured at Rennish to step aside, then he indicated the Lutawan woman with his chin.

“You have your sword in hand. Finish what you started.”

The woman seemed unafraid, her bitter gaze defying him to strike. And why shouldn’t he? She had no claim on him! She, who had betrayed him by coming here, and only because he’d granted her first prayer, but not her second . . . as if it was his fault.

So he resolved to obey his father—that was the easiest thing to do—but to his shock he discovered his will was not his own. He was stymied, caught in some spell, unable to raise his sword against her. He had given this woman the gift of her own life just that morning and now he found he could not undo it. He looked at Dehan in

confusion. “The Dread Hammer did not let me kill her before, and I can’t kill her now.”

“Then let her be spared,” Takis said.

Smoke and Dehan were both caught by surprise, so rarely did Takis speak against her father. She settled her sword into its scabbard, then crossed her arms and studied Smoke. “I am not my father. It pleases me to know there’s mercy hiding somewhere inside you, and I honor it now by setting aside the fate she should have met this morning. From that she is spared—”

“Takis!” Dehan objected, but she stopped him with a cold glance.

“From that she is spared,” Takis repeated. “But this evening, this Lutawan woman used my trust and my sympathy to get close to you, my beloved brother, to try to kill you, and that I will not forgive.”

She held Smoke’s gaze for many seconds, while the thunder grumbling in the distant mountains faded into silence, and the spell that restrained him unwound.

“What would you have me do?” he asked at last.

“Finish it. Or I will do it for you.”

The woman recoiled, though she seemed more shocked than frightened . . . as if she’d believed herself safe because this morning Smoke had been bound by her prayer. But Takis required justice, and she was a woman

too. Smoke stepped forward so swiftly the farm wife had no chance to turn away before his sword pierced her heart and withdrew.

After the body was buried well away from camp and Smoke had washed again in the stream, he returned to his mat at the edge of the tent. The torches and lanterns had been put out, the dice had been put away, and the soldiers were sleeping. Closing his eyes, Smoke let the prayers wash over him.

Avenge me.

He thought of answering one . . . or maybe two.

And then? Tomorrow perhaps, but surely not long after, there would be another farmhouse, or a village whose people had offended the Trenchant. Smoke cared nothing at all for the lives of the Lutawan men he would be asked to kill, but the women bound him with their prayers. Why?

The Trenchant had said Smoke's role was to serve the Koráyos people, but the women of Lutawa called on him to serve them. How could he do both? It was impossible. Neither could he choose between these obligations, but that didn't mean there was no choice.

His demon nature let him sense the threads that made up the weft and warp of the world-beneath, reaching

farther than even the Trenchant could perceive. If he slid away on those threads, abandoning his duty to the Koráyos people, would he cease to be? If he went so far that he could no longer hear the bloody prayers, would he be free?

He needed to know.

Quietly, he sat up. He shrugged into his coat, strapped his sword to his back, then took up his bow and his quiver. His coin purse was already in his pocket.

Ekemion stirred sleepily, not far away. “Smoke? Where are you going?”

Smoke’s glittering eyes cast a faint glow on Ekemion’s puzzled face. “Tell the Trenchant something for me.”

“I . . . what? What do you mean?”

“When you see him again, tell him I do have a choice, and I choose to serve him no more.”

He reached for the threads, dissolved into gray vapor, and was gone.

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Linda Nagata grew up in a rented beach house on the north shore of Oahu. She graduated from the University of Hawaii with a degree in zoology and worked for a time at Haleakala National Park on the island of Maui. She has been a writer, a mom, a programmer of database-driven websites, and lately a

publisher and book designer. She is the author of nine novels including *The Bohr Maker*, winner of the Locus Award for best first novel, and the novella “Goddesses,” the first online publication to receive a Nebula award. She lives with her husband in their long-time home on the island of Maui.

Author Spotlight: Joe Haldeman

Andrew Liptak

Hi Joe, thank you for speaking with us about “A Separate War”. This story takes place after your novel *The Forever War*, correct? How did it come to be?

I never intended to write a sequel to *The Forever War*, but Robert Silverberg wrote to a number of authors of “classic” SF novels, asking for novelettes that were based on those works. So I wrote the novelette and then realized it could be expanded (or continued, rather) into a novel.

You’re well known as a military science fiction author, in addition to your own military experience. How has this shaped your writing?

Every writer who’s been a soldier writes about it. Almost every soldier’s first novel is a war novel—and often enough there’s no second novel, because nothing that dramatic will happen again.

Have you found that the “military science fiction” label as accurate for your writing?

No. I’ve written over two dozen books, and only a few were military science fiction—in fact, only *The Forever War* fits the definition exactly. The main characters in *Forever Peace* and *Forever Free* are veterans more than soldiers, strictly speaking.

Recently, “Don’t Ask, Don’t Tell” was repealed, and the US military can allow homosexual members of the various branches to serve openly. What are your thoughts on this, given the content of your story?

I don’t think a person’s sexual orientation affects his or her ability to be a soldier. If other soldiers have difficulty living in proximity with gays, in a way that’s *their* problem. (Realistically, it becomes everybody’s problem, but one that can be dealt with . . . I mean, a modern point of view would be “people should grow up before they’re allowed to carry a gun.” Of course people don’t.

But taken in historical perspective, I don’t think it’s greatly different from racial integration, which not so long ago was unthinkable in a military context.)

Your characters exist in a time when their homes have changed drastically from when they lived there—do you see parallels in the current situation?

It's true in any situation where you take a people away from home, put them into combat, and then send them back home if they survive. "You can never go back" is a truism: Even if "home" hasn't changed—and it always has—the person who goes back to it is not the same person.

Finally, what do you have coming up that we should be keeping our eyes out for?

A new novel, *Work Done For Hire*, about a year from now. Have to finish it first. *Earthbound*, the last book in the Marsbound trilogy, came out this year.

Andrew Liptak is a freelance writer and historian from Vermont. He has written for such places as *io9*, *Tor.com*, *SF Signal*, *Blastr*, *Kirkus* and *Armchair General* and he can be found over at andrewliptak.wordpress.com and at @AndrewLiptak on Twitter.

Author Spotlight: Ken Liu

Andrew Liptak

Hi Ken, thanks for taking the time to speak with us! What can you tell us about the origins of your story “The Bookmaking Habits of Select Species?”

Thanks for having me again!

Since much of my own short fiction stresses characterization, I particularly admire stories in which individual characters are basically absent, and the story is about entire peoples, species, ideas. For example, I think of E. Lily Yu’s “The Cartographer Wasps and the Anarchist Bees,” E. O. Wilson’s “Trailhead,” and Yoon Ha Lee’s “A Vector Alphabet of Interstellar Travel” as belonging to this subgenre. Another work in this vein that I’ve long admired is Italo Calvino’s *Invisible Cities*. Indeed, I used to write college and law school essay exam answers in the form of *Invisible Cities* fanfic, much to the amusement of my graders. (I do not recommend this approach if you care about your grade.)

This story is my first serious attempt to write in this style, very different from my past work. I hope readers like it as much as I do.

In this story, you present several races of aliens that have created written works, each very different. What do you see about sentience that drives us to write and tell stories?

I probably wouldn't go so far as to say that sentience necessarily leads to the narrative drive. (It would be interesting to see if our artificial intelligences, when sufficiently developed, would show a tendency to telling stories.)

Now, on the topic of writing, I think writing is one of the most important pieces of technology developed by human societies. The idea of externalizing our ideas and thoughts in a fixed, tangible form that is independent of memory is breathtakingly bold and revolutionary. Yet, while writing has been independently invented numerous times in human history, all human scripts essentially solve the problem the same way (see John DeFrancis's *Visible Speech: The Diverse Oneness of Writing Systems*).

I wanted to imagine what other forms writing could take: sentient, but not human.

Do you have any particular favorites when it comes to linguistic science fiction, such as the works of Ursula

K. Le Guin?

You got me pegged. I'm a huge Ursula K. Le Guin fan. *The Dispossessed* and *The Left Hand of Darkness* were breathtaking works that transformed my thinking about the power of fiction. I remember walking around for days in a daze after reading each of them, the ideas from the books circling around in my head from waking to sleeping, changing everything I saw. I hope I can write something that powerful someday.

Is it the medium that's important, or the story? Does one have an impact on the other?

I think most would agree that the medium in which a story is told affects its impact. Oral works are very different from written ones, and film, with its visual language, is distinct in yet other ways. And within written works, a story told in a novel will feel very different from the same story told as a closet drama.

But beyond these obvious distinctions, readers familiar with different scripts will be able to tell you that the written script of a language also affects the way a story is told and perceived, even independent of the language itself. A story written in hanzi vs. pinyin will

read very differently, even though they're both scripts used to write the same language. Each script has its own little visual conventions and tricks and advantages and disadvantages that shape the language and nudge the writer in ways that are both subtle and profound.

At the 2011 ReaderCon, you were on a panel that talked about how people here on Earth read, and how that's changed over time. How do the various means in which we read dictate how we perceive information?

I'd love to hear a neuroscientist's take on this.

In my personal experience, the shift from the codex to the web as the primary means by which I do most of my reading has altered the way I think about knowledge. Before the web, I thought of knowledge primarily in the metaphor of the library: meticulous taxonomies that classified information into relatively unchanging volumes from authoritative sources that are periodically updated by new volumes. Now I think of knowledge primarily in the metaphor of the web itself: a constantly shifting, unstable set of interlinked snippets that are endlessly updated by uneasy consensus.

Curiously, I think we've resisted this shift in fiction.

We still prefer our narrative to come from a single author: unitary, coherent, self-contained. Experiments in collaborative storytelling and crowd-sourced narrative don't seem to have really taken off. I don't know why that is, but the phenomenon has provided fodder for some stories I've written.

Lastly, what do you have coming up that we should keep our eyes out for?

Two stories I'm working on represent forays into new genres for me: space opera and weird western. I have no idea if readers will like them, but I find them a blast to work on.

Andrew Liptak is a freelance writer and historian from Vermont. He has written for such places as *io9*, *Tor.com*, *SF Signal*, *Blastr*, *Kirkus* and *Armchair General* and he can be found over at andrewliptak.wordpress.com and at [@AndrewLiptak](https://twitter.com/AndrewLiptak) on Twitter.

Author Spotlight: Charlie Jane Anders

Robyn Lupo

How did “Love Might Be Too Strong A Word” start for you?

Like many good things, it began at WisCon, the feminist science fiction convention in Madison, WI. I had a lot of really intense conversations about the ways in which different science fiction and fantasy stories radically transformed gender roles. If you’ve ever been at WisCon, you know that really powerful conversations take place there, which can go on until three in the morning sometimes. Somewhere during one of those conversations, I hatched the idea of a society where gender roles were inextricably linked to division of labor. I wound up writing pretty much the entire first draft on the plane ride (and long layover) going home from Madison.

There’re a lot of new terms for personal pronouns, sexual activities, and slang that you’ve created. Can you tell us a bit more about why you chose to use new pronouns and terminology?

I spent a lot of time sitting in the Chicago airport, waiting to change planes, coming up with the details of this society. A few things became clear pretty quickly: With six different sexes, everything would become a lot more complicated, and you needed six sets of pronouns to differentiate them. None of the pronouns should conjugate exactly like “he/his/him” or “she/hers/her,” or you would lose some of the jarring quality of them. Also, this was a group of people who were trapped on a spaceship for decades, and they were unable to have children—so their sexuality was completely separated from reproduction and entirely connected to cementing social roles.

Can you tell us more about the social castes in this world?

Part of the assumption of the story was that everybody on this ship had been grown for the journey to the new planet—and they had their roles set in stone, from birth. There’s no social mobility on this ship, because everybody has a job to do that’s essential to keeping them going. I imagined that, assuming they actually reached the colony world and everything went according to plan, they would land and the breedpods would open. And at that point, the

new generation would be “born,” able to reproduce going forward. To that new generation of fertile children, the sterile people who got them to this planet would seem weird and pathetic—but the ship’s crew would mostly die of old age around the time the first generation on the planet reached puberty. (Except I thought maybe the Breeders, who’d be mostly in charge of raising these kids, might be engineered to live longer.)

**What was writing this story like, organization wise?
Did it take a long time?**

The first draft just poured out of me. It was a really unusual experience—usually, a first draft takes weeks, with a lot of blind alleys. I wrote a long “backstory” document explaining the origins of the spaceship and the six separate castes, including a ton of information that didn’t make it into the final story. Being stuck at an airport and on a plane with nothing to do can be really great for your productivity. And then, of course, the revisions took forever, and there were a lot of kinks to work out. A lot of stuff didn’t really “click” for me until I realized that the Medieval tradition of Courtly Love was the closest thing to how these people use romance to escape from their horrible lives (but also reinforce

hierarchies).

Why might love be too strong a word to explain Mab's feelings for Idra? Reading the story and about these two characters really made me think there was real love there.

I think that's partly just Mab being a hardened cynic. But also, it underlines the fact that "love" is a form of propaganda in the world that Mab lives in. When you read enough Sir Philip Sidney, you start to see Courtly Love as this oppressive weird pantomime, where someone who has tons of status pretends to be helpless while stalking someone who has way less power. Stella barely gets a word in edgewise in "Astrophil and Stella."

What's next for you, Charlie Jane?

I hopefully have more stories coming out soon, and I'm plugging away at a novel.

Robyn Lupo has been known to frequent southwestern Ontario with her graduate student husband and elderly dog. She writes, reads, and plays video games. She is personal assistant to three cats.

**Author Spotlight: Tina Connolly & Caroline M.
Yoachim
Caleb Jordan Schulz**

In your story, “Flash Bang Remember,” Girl23 rebels against the adults by trying to destroy the chip that records all of her memories. Do you feel that it’s an inherent flaw for adults to depend on a child to act exactly as they expect?

Caroline: The adults in this story have shared memories, which might predispose them to thinking that they could predict Girl23’s behavior. And Girl23’s environment might make her somewhat more predictable than kids usually are—the colony ship is a controlled environment, and everyone on the ship interacted with Girl23 according to a strict protocol. As a result, many of her actions were things that the adults could (and did) expect. Even so, she definitely manages to surprise them in the end.

Tina: I don’t know if it’s a flaw per se, but expecting that *anyone* will do exactly as you say is going to lead to trouble. And, more interesting stories. I find my kid characters are even more stubborn than adult characters

about doing what they want to do and not what I want them to do.

False memories are a staple of science fiction, from Philip K. Dick’s “We Can Remember It For You Wholesale” to the more recent Christopher Nolan film, “Inception.” What was the inspiration for your take on this subgenre?

Caroline: The idea for this story didn’t start with memories at all—it started from some idle speculations about what it might be like to be a child on a colony ship. I wondered whether it might be easier to skip childhood entirely and emerge as a fully-grown crew member. Recording one person’s childhood and giving those memories to everyone struck me as a way to accomplish that, and that became the core idea for a story that explores what it might be like if all the adults had this shared reference.

Tina: Caroline’s idea may not have started with memories, but it was one of the things that interested me when I went to write the story off of her outline. There were so many places to play around with the shared memories concept, and how the thing that united the rest

of the crew would alienate Girl23. And then, The Child's discomfort at dealing with this unique kind of popularity. I was also fascinated by the almost throwaway mention at the end of waking up a woman, but with The Child's memories, and having to transition through that gender dysphoria. The story turned out to be about Girl23's decisions *before* she's tanked, so it would have taken a novel to get to explore the topic of Girl23 waking up with The Boy's memories fully. (Hmm . . . a novel . . .)

With privacy lines blurring more each year, and much of many people's lives on display—uploaded daily pictures and innermost thoughts, what we're listening to, what we recommend, who our friends and contacts are, etc.—do you see a day when shared memories are commonplace?

Caroline: I'm not sure sharing memories will ever be possible, much less commonplace. A memory might seem to be a single coherent unit, but in reality our brains are constructing an experience from many distinct components. Take something simple, like what you ate for breakfast. I had oatmeal, with blueberries. When I recall this event, I can call up the texture of the oatmeal, the temperature, the flavors, the smell, and so on. Each of

these components might be stored in a different region of my brain, and it all comes together into a recollection of what I had for breakfast. Scientists are only beginning to understand how our brain brings these components together.

I think there are two methods that could be used for the transfer of memories—writing the memories directly into someone else’s brain, or feeding all of the components of the memory into someone else’s sensory systems.

Not enough is known about how memories are stored to even begin on the first method. If I want to give someone a memory of blueberries, which neuronal connections should I alter, and how should I change them? Does it matter what experiences the person has already had? I would expect it does, since someone who has had blueberries before would likely encode my memory of blueberries differently than someone who has never tasted fruit.

So the simpler thing, it seems, would be to read someone’s memory and then play all of the sensory information back to them. I would argue, however, that this loses something that is intrinsic to the memory. Giving someone only the sensory information is akin to going to see a movie with a friend—you both see the

same thing, but each of you will perceive it differently. Nonetheless, I think this is the closest we're likely to come to sharing memories, so when I was outlining the story I envisioned the process as a bombardment of sensations.

Tina: Oh man, describing it as an extension of Facebook sounds *awful*. Can you imagine logging onto your home page and being bombarded with memories of three trips to the store, five terrible bosses, two complaints about rain, and some girl randomly going on and on about facepainting? Or what about Twitter? Twenty-three memories of half-digested bagels.

Actually this sounds like a story I would write.

I think it would be quite a while before this sort of thing was possible—Caroline would know much better than I—but commonplace? I suppose my mind immediately leaps to the next form of entertainment. Nina Kiriki Hoffman had a story in *Clarkesworld* called “Futures in the Memories Market” that strikes me as the way this kind of technology would be used.

Is there any circumstance you would want to share a memory with someone else?

Caroline: I have often wondered what it would be like to experience the world through someone else's eyes; I envision an experience that is sort of the equivalent of taking a piggy back ride on another person's brain. On the other hand, I really value privacy (and even on Facebook I try to err on the side of not sharing too much), so the idea of someone else experiencing my memories is a little unnerving.

Tina: The way Caroline describes it makes me think of those "view those who viewed your profile" tickyboxes on Facebook and so on. You can see others' memories . . . but only if they can see yours. Yeah, not so much. But if we're talking about armchair traveling, I would totally try that, at least once. I mean, it would be pretty awesome from a writer's standpoint to be able to instantly see what it's really like to go deep sea diving or hang gliding . . . or even undercover as a cop. Think of all the details you could get right!

Many writers dream of co-writing a story or book with another author, but in practice this can be difficult. Could you describe the process that you two used to write this story together? What hurdles, if any, were there to overcome?

Caroline: Tina and I both suspected that writing a collaboration in sections wouldn't work well—at best, it would yield something with a choppy and uneven voice, and I vaguely recall that Tina prefers not to write stories in chronological order anyway. So we decided to try a collaboration where one person came up with an idea and wrote a detailed outline, and the second person wrote the story. In this case, I did the outline, and Tina wrote the story. It worked beautifully, and she sent the story back to me for revisions.

Then we both had babies, and the story sat untouched for a couple years. When I finally came back to the story, I was really pleased with what Tina had done with the outline. I think she did a fantastic job capturing the characters and the teenage voice, so it hardly needed any revisions at all.

Honestly, there were very few hurdles in the process, aside from the long delay due to life being too busy for a while. (Which, at least to my knowledge, neither of us minded.) On the other hand, our original plan was to write two stories. I have a lovely story outline from Tina that I do hope to write someday, but one of the things I learned from this experience is that I have a terrible time trying to write based on an outline!

Tina: I wouldn't say *prefers* not to write in chronological order. But yes, I've been working on a different collaboration story with an exceedingly patient friend for about five years. It's my turn to produce the next 4 pages. Baby-excuse notwithstanding, the fact is my brain just doesn't think very well in "next 4 pages" chunks. (That said, I've had to get better at both outlining and writing linearly to complete novels.)

So yes, for me this worked perfectly. The outline for this story had lots of good bits that coincided with the things I like to write. Not too surprisingly, as we sometimes joke about mindmeld anyway. And it was fun brainstorming the outline for the story Caroline has yet to write.

Finally, do you have any new projects you'd like to announce?

Caroline: My work has recently appeared in a couple of anthologies—"Blood Willows" appears in *Women Writing the Weird* (edited by Deb Hoag), and "Time to Say Goodnight" in *Million Writers Award: The Best Online Science Fiction and Fantasy* (edited by Jason Sanford). I also have stories forthcoming at *Daily Science*

Fiction, Weird Tales, and Toasted Cake.

Tina: My debut fantasy novel *Ironskin* comes out from Tor in October 2012, and I just turned in the sequel to my wonderful editor. I'm also doing an idiosyncratic 2012 flash podcast project called Toasted Cake, and the very first story I ran was a dark and twisted lovely little thing called "Pageant Girls", by Caroline. I'll be running another story by her later in the year as well. Other summer 2012 stories include "One Ear Back" over at Beneath Ceaseless Skies (for which Scott H. Andrews was kind enough to let me read the podcast version), and short pieces at Daily SF and the anthology *Bibliotheca Fantastica*, edited by Claude Lalumière & Don Pizarro.

Caleb Jordan Schulz is a writer, illustrator, and nomad, currently finding himself in Buenos Aires, Argentina. His fiction can be found in *Subversion*, *Scape*, the *Crossed Genres Year Two* anthology, *Ray Gun Revival*, and *Innsmouth Free Press*. In between his work for *Lightspeed Magazine*, he's a freelance editor, and blogs occasionally at: theright2write.blogspot.com.

Author Spotlight: Michael Swanwick

Erin Stocks

“Slow Life” won the Hugo back in 2002. Will you tell us a little about what inspired this story?

My friend Matt Howarth approached me about doing the script for a serial science fiction cartoon for a major online science site, which was looking for innovative material. It sounded interesting, so I started work on a story that could be broken down into single-page stories. The opening sequence of a raindrop falling on Titan and the chemical changes it undergoes would have been a long graphic of the layers of the atmosphere, punctuated with the technical info ending with space-gloved hands catching it in a plastic baggie and then a panel showing Lizzie O’Brien dancing and singing. The trouble was that the site owners wanted to own the series completely, but weren’t willing to pay the kind of money that would justify that. Matt broke his heart trying to argue them around and they wouldn’t budge. By the time we’d given up on the project, though, the story had its hooks in me and I’d fallen in love with the protagonist, so I decided to write it out.

The Hugo is proof, I think, that the website should have treated Matt better.

Why did you choose to set the story on Titan?

I blame Geoffrey Landis. He observed that NASA had spent billions of dollars sending out probes to the planets and moons of the Solar System and then posted all the scientific data, analyses, photos, and films on the web, free for anybody who wanted to use it—and most science fiction writers were ignoring this largesse! Which seemed to me not only a valid criticism, but a great opportunity. One which, incidentally, new writers should take advantage of—there's nothing that will get you attention like a well-written hard science fiction story.

I liked Titan specifically because there was a lot known about its chemistry and geography, but most people were not familiar with it, so a story set there would feel fresh to them. There was also the possibility—since confirmed—of open bodies of liquid on the surface, which still seems pretty exciting. Finally, there's speculation that primitive life forms might well be at work in the observed chemical processes there. Put all that together, and Titan is a natural for science fiction.

You've written a great deal of both science fiction and fantasy. Do you prefer writing one over the other?

They're both difficult—which for a writer is the same as fun—in different ways. The kind of science fiction I most enjoy requires a great deal of research, which takes up a lot of time. But fantasy requires constant attention to keep what you're writing from falling into default modes and becoming too much like every other fantasy on the shelf. Fantasy readers have very specific expectations and you have to be able to subvert those expectations in a way that the readers will find satisfying if you're going to create something new rather than derivative.

I've been happiest those times when I've been working on a fantasy story and a science fiction story simultaneously, one dark and the other bright, and could switch from one to the other whenever I got tired of what I was doing.

How did you go about researching and writing hard science into a story such as “Slow Life,” or other stories incorporating technologies that may not exist just yet?

After I decided to write “Slow Life,” I hit the Web and

started downloading NASA papers, learning all I could about Titan, its atmosphere, its physical makeup, and so on, until all the information put together told me a story. What I was reading kept emphasizing how cold the surface of Titan is and concluded that as a result of there being so little ambient energy available, any life there would have to be very simple. *Or very slow*, I thought—and there was the germ of the story.

The human tech in the story came from a lifetime of reading about such things and an awareness that tomorrow's space technology will have evolved away from today's. The Mitsubishi robofish already exists. Several people have suggested ballooning as a means of exploring other worlds. My contribution to that was realizing that you wouldn't need a gondola, just several sturdy D-rings on the vacuum suit.

So my formula is to read, read, read, and think. If that sounds pleasurable to you, then hard SF may be your thing. If not, I'd advise trying something else.

For our readers who might be new to your work, where do you suggest they start?

It depends on what you like. Fantasy? *The Iron Dragon's*

Daughter, about a girl who's been stolen by the elves and forced to work in a factory, building dragons. Literary science fiction? *Stations of the Tide*, which won a Nebula umpety-ump years ago. Hard science fiction? *Bones of the Earth*, my dinosaur novel. At the time I wrote it, not all that long ago, it was as accurate as was humanly possible. Today, of course, the science has moved on . . .

For short stories, any of my collections. Or keep watching the magazines. Even when I'm working on novels, like this year, and even though they aren't really profitable, I like to keep my hand in because I deeply love the form.

I'd probably be a lot better known if I'd chosen one type of story and hammered away at it to the exclusion of all others. But it's never been about my career. It's been about writing the best story I could at any given time.

What are you working on these days?

Currently, I'm working on two novels. One continues the saga of post-Utopian con men Darger and Surplus not long after their abrupt departure from Moscow at the end of *Dancing With Bears*. In this book, they set out to conquer China. Literally. With armies and such. The

other is the third and last volume in the fantasy sequence that includes *The Iron Dragon's Daughter* and *The Dragons of Babel*. The first book has a protagonist, Jane, who doesn't belong in her world and has to find a way out of it. In the second, Will is native to Faerie and has to find a place in it. So they're basically thesis and antithesis. The third book will be the synthesis, the one that makes a new sense out of the other two and answers all the questions the others were silent on. Like the other two, it will be a stand-alone novel, requiring no knowledge of the others for enjoyment.

I've also got a series of short stories that begins at Tor.com any day now. They're what Patrick Nielsen Hayden calls "Ruritanian fantasies," but with magic and (ultimately) a far more serious edge than you normally get from stories that are primarily intended to be entertaining. I'm genuinely excited about the possibilities in this series.

But then, I'm excited about the possibilities in *everything* I write.

Lightspeed Assistant Editor **Erin Stocks**'s fiction can be found in the Coeur de Lion anthology *Anywhere but Earth*, *Flash Fiction Online*, the Hadley Rille anthology *Destination: Future*, *The Colored Lens*, and *Polluto Magazine*. Follow her on Twitter @ErinStocks.

Author Spotlight: Wil McCarthy

Robyn Lupo

Can you tell us how you came up with “The Necromancer in Love?”

Actually, the story kind of tells its own history: I was researching the actual process of brain death, and realized what a mushy concept it really is. Basically, the body goes through a shutdown sequence, and “death” is the point at which medicine can no longer reverse the process. But that point has been moving; with CPR, defibrillators, and ventilators, legal “death” stopped being about the heart and now takes place in the brain. But there are researchers out there today who are working on ways to extend the time the brain can survive without oxygen, by doing things like injecting large amounts of insulin. This is all well and good, but it seemed to me that some of the early “successes” in this area could be rather unsettling.

Why did you choose love and passion as the motivating feelings for the necromancer? Is it really love the necromancer feels?

Fundamentally this is a story about not letting go—not being able or willing to let go. Love is one of the strongest emotions people can experience, and particularly in the first six months it behaves a lot like an addiction.

Combine that with grief—another emotion that can truly overwhelm—and it's a volatile mixture. If the worst possible person experiences that loss at the worst possible time, these emotions could literally change the world.

Can you tell us more about the world of your story?

The Age of Horrors is something I worry about from time to time. With smart phones and personal computers, we've begun to see how technology can leverage the talents of ordinary people to do things that used to take a whole office staff. Today we fit the whole office in our pocket, along with a library, TV studio, and after-work hangout. This empowers all of us, good and bad alike, so it's now possible for someone on the other side of the world to insert a virus on your phone, read your personal data, and steal your identity. Our laws and institutions have been slow to adapt, so right now we're living in the Age of Identity Theft.

If you extend that same concept to biotechnology, then

it would be very naive to think that human cloning, genetic engineering, and life extension hacks will be far behind. Hackers don't feel the sort of ethical restraint that tenured experts do, so it seems inevitable to me that these trails will be blazed by people who don't really know—or in some cases care—what sort of world they're ushering in. I expect things will settle down in a generation or two, as people clearly learn what not to do, but in the meantime a lot of weird shit could go down.

Why did you choose the lecture format for this story?

Just lazy, I guess. The science is key to this particular story, and a lot of it came from talking to doctors, so it just seemed logical to have a doctor regurgitate the information. If you strip away the lecture, the story is really only a couple of pages long, and not very meaty.

What's next for you?

Heh. Ain't tellin'.

Robyn Lupu has been known to frequent southwestern Ontario with her graduate student husband and elderly dog. She writes, reads, and plays video

games. She is personal assistant to three cats.

Author Spotlight: Kat Howard

Theodore Quester

In your story, “Breaking the Frame,” you play with the conventions of the short story—using art, and specifically, descriptions of photographs, to advance the story in unconventional ways. What prompted such experimentation?

“Breaking the Frame” was born from photographs. My friend Maria Dahvana Headley had shown me a book of Francesca Woodman’s photos, and they haunted me—I couldn’t get Woodman’s work out of my head, and I dreamt of the pictures. So I got a copy of the book, looked at it from cover to cover twice, and sat down and wrote the first draft. I knew as soon as I started writing that I wanted to use photographs as a framing device for the story in order to pay tribute to its origins.

Do you have experience in art or art history? Photography? A strong interest in the subject?

I take absolutely terrible photos. I have a negative talent for it. I’ve never studied art or art history formally. But I

love the visual arts, and I've found that one of the best things I can do to feed my own creativity is to immerse myself in art that is different than writing.

This is a very voice-driven story. Is that something you work on through revision, or did it come naturally? Do you read your work aloud?

In this instance, I was lucky in that the voice was there from the beginning. But I do always read my work out loud, sometimes multiple times. I think that the way the words sound can be a useful part of telling a story.

Was this a hard story to write?

Yes. Not so much from a technical standpoint, but from an emotional one. It was significantly different in an earlier draft, and writing that draft felt like taking sandpaper to the inside of my skin. So I am particularly grateful to my terrific writing group for helping me see all of the possibilities in what I had written, and getting me from that draft to the finished version.

So much of the story seems to deal with empowerment and change. Are these themes important to you? Do you believe in change?

My answer to both of those questions is absolutely yes. I think it is very much possible for people to grow into the spaces in their own skins, and to become the most real version of themselves. I also don't think those things are always easy—sometimes becoming empowered means clutching and clawing at every scrap of power you can wrench for yourself, and that growth can hurt. But I believe that the pain and the struggle are worth it.

What else do you have coming down the pipeline?

I have a ballet that I collaborated on with dancer and writer Megan Kurashige and Sharp & Fine—*A Thousand Natural Shocks*—that is premiering in San Francisco this month. There's a short story coming out in *Apex* later this year, and a novelette with *Subterranean*. I'm working on other projects as well, which I am too superstitious to mention, and I've recently moved back to the Twin Cities.

Anything else you'd like to add?

I really do encourage people to check out Francesca Woodman's photos. They are extraordinary, and I could not have written this story without seeing them.

Theodore Quester spent three years after college in Europe and now speaks seven languages; he spends his days teaching two of them to high school students. He is obsessed with all things coffee—roasting, grinding, pulling espresso—and with food, especially organic and locally grown. He earned his geek street credentials decades ago, publishing an article in *2600 Magazine* as a young teenager, then writing reviews for *SF Eye* and interning at *Omni Magazine*. In his spare time, he swims, bikes, runs, and reads a little bit of everything; when inspired, he writes fiction, mostly for children and young adults.

Author Spotlight: Delia Sherman

Theodore Quester

Your story, “Cotillion,” was originally published in an anthology for young adults, but features a 1969 college-aged protagonist who makes some very adult decisions. Do you think of this as a young-adult story? Or were college students in 1969 young adults?

Well, I thought it was a YA story. I took the sex out of it and everything. And I did my best to try and make it reflect what it felt like for me to be a college-age girl in 1969, out in the big city on my own recognizance and a little over my head. I’m sure there are many college-age girls in 2012 who would have made the same decisions—providing they’d listened to the right records and read the right books. Kids haven’t changed that much since 1969. In my years of teaching Freshman Comp and hanging out with my nephews and my friends’ children, I see some young adults who are level-headed and some who go off in all directions, just as I knew both kinds when I was one myself. As I see adults who make bad decisions, come to that. I’m not particularly interested in teenagers as a type or a trope or a set of marketing expectations. I

am, however, extremely interested in this particular teenager, who probably screamed at her mother when she got home and got grounded and cried all night because she wished she'd run away with Valentine when she had the chance, then got drunk when she finally went out with him because she was feeling rebellious.

You paint a picture of NYC in the late '60s, of the Village and Hippies, but also of the high society debutante balls. Any of this come from personal experience?

Oh, yeah. I made my curtsy to society all right. Repeatedly. I have the long white dress and some pictures to prove it, but I can't say the experience had the effect my mother desired. I also sang at open mics in the Village with my best friend when I was in high school. Never met any elven knights, though. More's the pity.

Music and dance also play such an important part in this story. Do you have any musical or dance background, or did this require research?

Well, both. Because of Ellen's job with WGBH, she was

very involved with the Early Music community, which holds a huge festival in Boston every two years. I love early music, so I went to every concert she got tickets to. I listened to a lot of lute music, saw a lot of interesting-looking people playing a lot of strange-looking musical instruments. During a dance demonstration in a church in Boston, I took notes for the faery ball. And I unblushingly modeled the Queen of Elfland and her band on musicians I know and have heard play. I even told them I was doing it and asked the older ones about the early music scene in the Village, hearing in return a lot of colorful stories that (alas) didn't fit into my story. I think I remembered to send Paul O'Dette a copy of the story when it came out. I know I promised him I would.

You allow your protagonist to make some very adult, very non-fairy-tale choices. Was this a conscious decision?

Well, Celia's a modern girl—modern for 1969, anyway. She (like me and most of my friends) is an anti-war liberal, a newly-minted feminist carrying a big grudge against the establishment. In an earlier draft, she thought (and even argued with Guy) about politics on stage, but I took it out because it slowed down the story. She's very

romantic, as the young are romantic, but she's also a realist, as the young can be realists if they've got the right temperament. I see her as making both fairy-tale and adult choices—the fairy-tale ones in Faerie; the adult ones when she is back in the real world, facing going home to her certainly-displeased parents. Perhaps it comes down to the fact that the kind of fantasy I like best to read—certainly the kind of fantasy I like best to write—is about how individual, unique, particular characters deal with their interactions with fairies and mermen and ghosts and all the other strangenesses I throw at them.

What else do you have coming down the pipeline?

I'm working on a middle-grade novel about a boy who is apprentice to an evil wizard on the coast of Maine. And I'll have a short-story collection coming out from Small Beer Press next year, for which I'm writing a new novella set in an alternate Victorian London in which magic use is limited to the nobility and science is the province of the middle classes.

Anything else you'd like to add?

Nope. Except to thank you for reprinting “Cotillion” and for coming up with questions that made me think what on earth I really was trying to do with Celia and Valentine. I haven’t thought about them for a while, and it was instructive.

Theodore Quester spent three years after college in Europe and now speaks seven languages; he spends his days teaching two of them to high school students. He is obsessed with all things coffee—roasting, grinding, pulling espresso—and with food, especially organic and locally grown. He earned his geek street credentials decades ago, publishing an article in *2600 Magazine* as a young teenager, then writing reviews for *SF Eye* and interning at *Omni Magazine*. In his spare time, he swims, bikes, runs, and reads a little bit of everything; when inspired, he writes fiction, mostly for children and young adults.

Author Spotlight: Linda Nagata Jennifer Konieczny

What inspired your short story, “A Moment Before It Struck?”

Last fall I resolved to start writing short stories again, and after doing two hard science fiction stories, it seemed like the right time to try a fantasy. Since I had just finished up the second novel in my fantasy series, *Stories of the Puzzle Lands*, I had a pretty good idea of what I wanted to write about.

On your blog, you said that “A Moment Before It Struck” is a prequel story set in the world of your *Stories of the Puzzle Lands* novels. Can you tell us a bit about the universe and how the story fits in?

The *Puzzle Lands* books are a quirky sort of low-tech fantasy: gritty, fast-paced, and darkly humorous. The setting is entirely imaginary, but includes two cultures in conflict: the Koráyos, a stern, egalitarian people, and Lutawa, an extreme patriarchy bent on expansion. Smoke is the protagonist in “A Moment Before It Struck” and

also in both Puzzle Lands books. He's a cold-blooded killer called to serve the will of a violent god, while trying to put together a meaningful life of his own. The short story tells of his estrangement from his close-knit and very peculiar family. The consequences of that estrangement drive the plot of *The Dread Hammer*, the first book in the Stories of the Puzzle Lands.

You also mentioned that its length of 4300 words is a personal victory because your short fiction is usually longer. Could you tell us about your usual writing process and if you changed anything in order to keep this story shorter?

I always try to have in mind a general idea of the story arc before I start writing: beginning, middle, end, along with theme, setting, and characters. But I tend to think like a novelist, and when we get bogged down in plot, the temptation is to throw new things into the mix just to see what comes of it. Short stories demand a different sort of discipline. I'm constantly reminding myself to keep it simple, to focus on the one core problem. I think I was able to keep this story shorter because of its structure: It's basically two scenes, with one scene nested in the other.

Smoke says, “I do have a choice, and I choose to serve him no more.” Do you think you would make Smoke’s decision to turn away from two impossible obligations?

I hope so, though I think the theme here is that people intent on controlling your life will try to enforce the idea that your options are strictly limited, which usually isn’t true—though the cost of making a third choice can be high, especially in a family situation.

In the Author Spotlight for “Nightside on Callisto” you said that *Hepen the Watcher*, the second Puzzle Lands book, was released earlier this year and that you were hoping to lay out a third book before the year is over. How is it going? What’s next for you?

I’m still hoping to start on a third Puzzle Lands book, though not before the fall. Right now I’ve got the rough draft of a novel that needs to be fleshed out, and I’ve just started on a near-future thriller that I’m pretty excited about, though it’s too soon to know if it will go anywhere. And now that I’ve returned to writing short stories, I find I’m really enjoying the form, and I hope to do a few more of those.

Jennifer Konieczny studied English and History at Villanova University and Medieval Studies at the University of Toronto. She currently resides in Philadelphia and enjoys volunteering as a slush reader, author interviewer, and editorial assistant at *Lightspeed Magazine*, and inflicting her medieval-studies self on her students.

Coming Attractions

Coming up in September, in *Lightspeed* . . .

We'll have original science fiction by Adam-Troy Castro ("My Wife Hates Time Travel") and Brooke Bolander ("Sun Dogs"), along with SF reprints by Elizabeth Bear & Sarah Monette ("Boojum") and Harry Harrison ("The Streets of Ashkelon").

Plus, we'll have original fantasy by Nina Kiriki Hoffman ("Unnatural") and Peter Sursi ("The Seven Samovars"), and fantasy reprints by Scott Edelman ("The Last Supper") and Holly Black ("Heartless").

For our ebook readers, our ebook-exclusive novella will be "The Green Leopard Plague" by Walter Jon Williams, and of course we'll have our usual assortment of author and artist spotlights, along with our feature interviews.

It's another great issue, so be sure to check it out. And while you're at it, tell a friend about *Lightspeed*. Thanks for reading!