CHAPTER TWENTY-NINE

Inside and Outside the Box

Patricia Ensworth

OUR STORY TAKES PLACE IN NEW YORK CITY. AS WITH MOST NEW YORK DRAMAS, THE PLOT REVOLVES around real estate.

The main character is an office building in Lower Manhattan: a bland 12-story box constructed soon after World War II whose afternoon sunlight was eclipsed a quarter century later by the towers of the World Trade Center. The building has the honor of being the only authentic, intact, and unadulterated element of this pseudomemoir. Lawyers and colleagues please take note: all else (the company, the people, the events, the narrator) is a collage of facts which individually are true but collectively are fictional.

I first laid eyes on the building during my job interview at Pharaoh Investment Guides, Inc. I was applying for a position as a software tester, and as soon as I walked in the door I liked the feel of the place. Although Pharaoh was a world-class publishing company specializing in financial news and analysis, an international dynamo with offices around the globe, its headquarters seemed serene and friendly. The outside of the building might have been plain, but the inside was tastefully decorated, the lobby resplendent with gilt and marble architectural detail. People smiled and greeted each other in the hallways like residents of a small town.

The hiring manager, Jacob, was a thin, scholarly, nervous man who supervised the development on Pharaoh's book-formatting system.

"We don't have any full-time testers now," he admitted. "We hired a guy last year, but after a few months he decided he wanted to be a developer instead. Mostly our end users and clients have been doing the testing. I can't give you the details unless you come on board, but they've missed a few things that came very close to putting us out of business. We need somebody to come in and help us implement a more structured approach."

He squinted at my resume. "So…you have a master's degree in anthropology. Did you get involved with computers on an archeological dig or something?"

I explained that I had studied the structure and function of cultural systems with a focus on business activities. During graduate school I had earned money by writing software documentation, and then by testing software. I discovered that I had a knack for writing test cases based upon an analysis of how human beings used the software as a tool to communicate within their own cultural systems. I was currently employed by a global financial services firm to run usability tests on software that had been developed in the United States and would be deployed in its international offices. However, there had been a reorganization, and I didn't like my new boss.

To my surprise and delight, Pharaoh offered me the job. I had gotten along well with Jacob and was looking forward to working for him, but the Friday before the Monday I was supposed to start he called me with some disturbing news.

"Sorry about this, but I'm leaving. I got a great offer from an Internet start-up in Silicon Valley. Today is my last day. Don't worry—you'll do fine here."

On Monday morning the person who came to pick me up at the reception desk was an elegant, statuesque African-American woman about my own age. She introduced herself as Barbara, the project manager for the editorial systems. I followed her into an elevator and up to her area on the 6th floor, where I met the PMs for the other applications. Louise, a plump, grandmotherly, former human resources manager, looked after the HR systems amid a forest of lovingly tended plants. The PM for all internal and external web-based applications was Caitlin, whose tight skirt and low-cut blouse, stiletto heels, long manicured fingernails, and glamorous haircut made me wonder by what path she had arrived in the realm of software engineering. The fourth PM was Nick, and he worked on the production systems that fed the publications to the printers and websites. Nick told me that he had served in the Air Force during the first Gulf War—a fact corroborated by his erect posture, his clean-cut appearance, and his respectful demeanor.

From this informal PMO Gang of Four I learned that in addition to the systems they worked with, there were a few others whose development teams got along without any project manager: the financial systems, the sales systems, and the internal reporting systems. Pharaoh did not follow a defined methodology for project management or software engineering. The project managers' role was limited to coordinating resources, monitoring

budgets, and filling out status reports. The real power resided with the executive director-level development managers to whom the project managers and developers all reported.

"So who am I reporting to?" I finally asked.

There was an awkward silence.

"Jacob hired me," I went on. "He said he was lead developer on the software that formats the content for the books. Is that editorial or production?"

"Production," Nick replied. "But there has been a reorganization. The ED who was development manager for internal reporting was promoted to managing director of systems development. All the EDs now report to him. Did you meet Dave?"

"Probably," I said, trying to recall all the people who had interviewed me during my three visits to Pharaoh.

"Dave thinks there is a greater need for testing on the sales systems," Barbara said. "But the ED who is dev manager for those systems doesn't agree. And there is no PM in that area."

"So who *am* I reporting to?" I asked again.

"The dev manager for sales systems," Caitlin smirked. "His name is Scott."

Sensing the onset of an anxiety attack, I forced myself to take several slow, deep breaths.

"Let me get this straight," I said. "My new boss is a development manager I've never met who doesn't think he needs a software tester."

Louise patted my hand. "It's only temporary. Things will get sorted out, you'll see."

Nestled under Barbara's protective wing, I was taken around and introduced or reintroduced to various members of the systems development group, and then delivered to my new manager's doorstep. Scott's lair was located midway along a corridor of identical offices, but it stood out from the others because it was dim. Its occupant had unscrewed the fluorescent bulbs in the ceiling, substituting a stylish high-tech halogen lamp on his desk and a Tiffany-shaded living room lamp on the credenza. An Indian mask hung on one wall—Tlingit or Haida, I guessed—across from some framed underwater photos. The room smelled of stale cigarette smoke.

Scott himself stood out from the other denizens of software development in that he seemed dazzlingly overdressed: suit pants with a sharp crease, business shirt, tie, cufflinks, shoes polished to a glossy shine. At the time, I jumped to the conclusion that he must have been in costume for a presentation to senior management, but I soon found out that it was his everyday attire. He seemed to be in his mid-30s, average build, fit, with thick, longish brown hair, brown eyes, and a space between his front teeth. He was handsome, but the devil-may-care frat boy had never been my type.

I sat down in the chair opposite his desk with my left hand on my knee to display my wedding ring. He opened the credenza and took out a notepad. Before he closed the door I spotted a pack of cigarettes and a half-full bottle of vodka.

We regarded each other in silence for a moment. Eventually he bared his teeth in a sort of smile, though his eyes remained unfriendly.

"So…you're our new scapegoat," he said.

It was an inauspicious beginning, but things did indeed gradually get sorted out. After Scott ignored me for a couple of weeks, hoping I'd go away, Dave the managing director intervened. Though I would continue to be responsible for testing the sales systems, he reassigned me to report to Nick the project manager, and he told Scott bluntly to change his attitude.

Scott managed the development of three sales applications: a content management database for the sales force, a database of marketing analytics, and an order fulfillment system. As an entry-level developer several years earlier, he had designed and built all three based upon requirements given to him by a friend in the marketing department. The applications had been very successful, and the business sponsor had been promoted to vice president of sales and marketing. Scott had been promoted, too. Each application now employed its own lead developer and a couple of junior developers.

However, Scott was in way over his head. He had been an excellent developer, but during his ascent to the ED position he never had the time or inclination to learn about software engineering or project management. The high rate of failures and defects in his systems was the result not of shoddy code but of chaotic development processes. His stellar reputation was based upon the fact that he would do anything to please his user community, including developing a unique version of the application for a single individual and personally installing it on that user's computer.

It didn't take long for me to realize that Scott knew he had crawled out on a dangerously weak limb and was worried that it would break underneath him. If he fell from his lofty ED perch, his wealthy, prominent family who had been disgusted by his decision to play around with computers rather than go to law school would be able to gloat. Also, everyone he worked with was aware that he drank enough beer at lunch and vodka at his desk to qualify as a borderline alcoholic.

Fundamentally, I liked Scott. I thought he was smart, hardworking, creative, and honest. Nick encouraged me to address the process issues plaguing the sales system. But I couldn't get through the fortress of Scott's defenses with my test strategy or defect metrics, and my patience finally wore out. One day when he came back woozy after lunch, I confronted him.

"Scott, I wish I could convince you that we're both on the same side," I told him. "I'm not here to spy on you for Dave, or criticize you, or undermine you. I'm supposed to be making you and your team look good. Like a coach, or an editor. I really do want to help."

Perhaps Scott sensed that I was on the verge of quitting and worried about Dave's reaction, or perhaps he felt he had nothing to lose by changing course. Whatever the reason, after that day we were no longer adversaries and instead became colleagues.

Ironically, I was now in over my head, too. I knew how to create, execute, and report on tests—but the software engineering and project management process improvements demanded knowledge I did not already possess. I bought books, and my fourth-grade daughter and I studied together in the evening. Nick supported my training requests and Dave approved the budget. My husband put in extra hours for housework and child care while I took classes and attended conferences.

Over the next few months we made slow but noticeable progress. Working closely with the eight sales systems developers, Scott and I tackled configuration management, version control, change management, and defect tracking methods. It was a struggle, but there were many moments of humor in between the fights, and we grew to respect each other's judgment. I felt like a physical therapist whose patient finally starts doing the necessary exercises on his own, and the improvements showed in the declining defect rates. Our most contentious episodes involved the concepts of code freeze and feature freeze. Nick was very helpful in my crusade against scope creep: he was firm and unflappable, and had the kind of mature perspective on day-to-day crises that probably comes from surviving in an actual combat zone.

Other ED development managers began to take an interest. I was asked to help hire and train testers for their systems. Within a three-month period Irene took on the financial systems (accounts payable, accounts receivable, billing, cash management), Randall joined the operations team (editorial, production, internal reporting, legal, HR), and Felipe signed on to the web development juggernaut. Louise the project manager was reassigned from HR to financials, and Irene reported to her. Randall reported to Barbara, Felipe reported to Caitlin, and I continued to report to Nick. Though on the organization chart the PMs and testers were all dispersed among development groups supporting different lines of business, in practice Barbara was team captain of the PMs and I became team captain of the testers.

It was an interesting and enjoyable time. All the new testers brought in fresh ideas and approaches, and since both Irene and Felipe came from well-known software vendors their expectations helped raise the bar for standards across the entire group. Dave permitted every development team to establish its own practices, so there were no serious turf battles.

Our office building fostered a sense of community. There was a cafeteria—its food wasn't great, but it provided a neutral and comfortable place to get together for purposes ranging from impromptu discussions with developers to inter-team Scrabble tournaments. The fitness center in the basement enabled us to sweat out stress and exchange a few words with end users. The library was a welcome sanctuary from the hubbub around the cubicles for anyone who needed peace and quiet to read, write, or think. Another popular hideout was a vast, empty two-story storage space on the ground floor that had once housed a

bank branch. Though it lay behind a heavy locked door, everyone knew the security code for the buttons—as well as the unwritten code about not interrupting or disclosing anything illicit that went on in there.

Yes, things were going well, productivity and morale were high…until Scott's girlfriend broke up with him.

Suddenly Scott was morose and irritable, and began taking longer liquid lunches. He and I had never talked about our personal lives much, so I heard the news from Randall, who had become Scott's workout buddy at the fitness center. The lead developers on the sales applications complained to me that Scott had begun radically revising their software, as if by immersing himself in coding again he could distract himself from his troubles.

One Thursday evening the entire systems development group was invited to a party at Windows on the World celebrating a major release of Pharaoh's public website. It was fun, and the sunset view of the harbor was spectacular, but I had to leave while the party was in full swing because I needed to get home and relieve my babysitter.

The following day Scott was absent, our cubicle area was eerily quiet, and everyone in our group seemed tired, cranky, and hunkered down. Assuming that the average blood-alcohol level was still in the hangover zone, I went about my business and cleaned out my email folders.

But on Monday Scott's office was empty—as in vacant, cleaned out, devoid of all personal possessions. Even the fluorescent bulbs overhead were back on.

I found Anupam, the lead developer for the marketing analytics application, and asked him what happened. He shook his head, drew his finger across his throat, shrugged, and resumed typing.

My search for Nick brought me to the cafeteria, where he and Caitlin were finishing their breakfast. Without waiting to be invited I pulled up a chair.

"Hi there! Do either of you have any idea…"

"Would this be about Scott's untimely departure?" Nick inquired.

"Yes it would."

Caitlin laughed. "You missed quite a scene at the party."

"Scott got totally s_ _tfaced," Nick said. "He grabbed Dave in a headlock and started insulting him."

"Well, I suppose physically attacking your boss could be grounds for termination," I said. "Did Scott complain about Dave's management?"

Caitlin laughed louder. "Not quite. He called Dave a pansy and said his only qualification for his current job was the fact that he's having an affair with Bob Wheeler."

"Wheeler? The head of the Latin American region? But he's married, and so is Dave."

Caitlin stopped laughing. She and Nick exchanged a world-weary glance, and then both of them looked at me pityingly.

I blushed, feeling like a kid who has been invited to sit at the grownups' table and then knocks over a burning candle.

"But this…this is incredible," I stammered.

"It gets better!" Nick said brightly. "Scott wouldn't let go, and Dave started to pass out, so Paul stepped up and punched him hard enough that he sailed backward into a table. Scott crawled away under his own power, but I hear he broke a few ribs. Dave's neck is sprained."

"Wow. And I thought I was having an exciting evening helping my daughter glue pictures onto poster board for her science project."

It was pretty hard to focus that day. Nick advised me to just keep on doing what I had been doing until the smoke cleared. I met with Anupam and the two other lead developers on the sales systems for a routine status update. Late in the afternoon I received a call from Dave's chief of staff summoning me to his office at once.

The corner office Dave occupied was three times as large as any ED's office. I had never entered it before, and it seemed like a long way from the door past the couch and conference table to the chairs in front of his desk. A quick scan of the room turned up no family pictures or personal decorations except for a framed photo of a beagle. At Dave's gesture I sat down and squinted through the afternoon sunlight that shone directly into my eyes.

Dave was a small man in a large leather executive chair, and he was wearing an orthopedic collar around his neck. He had slender hands, delicate features, and fine blond hair gelled into a fixed flat plate. I had spoken with him a few times, but we had never engaged in a conversation of any length or substance. Now when he spoke to me his voice was so low and mild that I needed to lean forward to hear his words.

"You know, software testing is considered an overhead cost," he began with a pleasant smile. "Sometimes it's hard to demonstrate the value of it to the business. Quality assurance initiatives are always the first to go during budget cuts."

"I understand," I said. In fact, I was thoroughly confused because his words and his facial expression seemed contradictory.

Based upon these preliminary remarks, I assumed I was about to be laid off. However, the opposite happened: a promotion. Dave informed me that he wanted me to lead an official QA group. I would report directly to him. The testers would report 50% to their ED development managers and 50% to me.

In other organizational changes, Anupam the marketing analytics developer would replace Scott as development manager for the sales systems. A new project manager and a replacement tester for the sales systems would be hired. Following the same model as the QA group, Barbara was being promoted to lead a new Project Management Office. The

PMs would report 50% to their ED development managers and 50% to her. Dave expected Barbara and me to collaborate in implementing process improvements for project management and software engineering across the group.

As Dave described my new role, I felt excited and honored but also a bit apprehensive. Reporting to him, I sensed, would be very different from reporting to Nick. Dave had no background in software engineering whatsoever. He was an MBA whose involvement as a "power user" of the internal financial reporting systems had persuaded the chief information officer that he would do a good job supervising the software development. At the ED development manager level he had surpassed his peers in delivering functionality on time and in controlling costs—but also in staff turnover.

It was a big shake-up. The development managers were unaccustomed to supervising PMs and testers, and they weren't sure what tasks to assign or how to evaluate performance. The PMs and testers were pleased to work more closely with the development teams, but worried about compromising their independence and objectivity. Our former peers felt awkward about reporting to Barbara and me. We were concerned about the matrix reporting relationship, and wondered how we would negotiate with the development managers about setting the PMs' and testers' priorities.

Among the new obligations Barbara and I acquired was attending Dave's biweekly status meetings for his direct reports. Before our first appearance, Dave asked each of us to prepare a presentation about our objectives and strategies. My anxiety over this debut performance reached the point where I needed to carry around a paper bag to breathe into when I started feeling dizzy. I knew exactly what I wanted to say, and I rehearsed it thoroughly with my family's patient coaching, but the idea of trying to persuade an entire group of development managers at once gave me terrible stage fright.

At the status meeting, I sat down at the conference table for the first time with EDs I knew only by reputation. In addition to Dave, his chief of staff, Barbara, and Anupam, there were four new colleagues I would soon be dealing with on a daily basis.

The ED for the financial systems, Mark, was a loose-limbed, easygoing, cheerful VB developer and RUP aficionado. At 35, he looked 10 years younger. He had married his high school sweetheart immediately after college and they had already produced three kids. Outside of work, his favorite pastime was leading his son's Boy Scout troop. He could always be counted upon to make generous contributions to whatever charity anyone was collecting for.

Glowering beside him was Paul, the ED for web development and the hulk who had broken Scott's ribs. A burly, overweight, but muscular powder keg of simmering resentment, he lived alone inside a den of electronic musical instruments and disassembled computers. In a brief hiatus from writing C++ code he had accidentally fathered an illegitimate child whose mother frequently sent him subpoenas. His spare time was devoted to riding his Harley in Adirondack Park. He was also the group's senior drug dealer.

Across the table sat Zvi, ED for the operations systems. Zvi was in his early 50s and had been around since Pharaoh's mainframe days. He was an Orthodox Jew who always dressed in a shapeless black suit and threadbare white open-collared shirt. He wore thick wire-rimmed glasses that made his eyes seem unnaturally large. As far as anyone knew, Zvi did not have any extracurricular hobbies because he lived with his wife and six children in Rockland County and had a two-hour commute each way. Zvi could sit absolutely still for an extraordinarily long time, and he was a very attentive listener. People from all the development teams who had difficult technical and political problems dropped by Zvi's office to ask his advice.

The fourth person I was formally introduced to that morning was Carol Chu. Unlike other managers who were referred to simply by their first names, everyone always said "Carol Chu" when talking about the ED for database development. Carol stood 4 feet 8 inches tall in her running shoes, and she was nearly always smiling. Born and raised in Shanghai, she had earned a PhD in mathematics at Cal Tech. Her husband was a professor of physics and their 10-year-old son was a chess champion. It was said of her that within the terabytes of data stored on Pharaoh's servers she knew the location of every pointer in every index at all times. Although she frequently sent email messages between 2:00 and 5:00 a.m., she treated her staff kindly, like a large extended family, and she never missed an opportunity to celebrate their birthdays.

Following some chitchat about the Mets' dismal performance and the new falafel restaurant that had opened down the block, Dave called the meeting to order. He welcomed Anupam, Barbara, and me to the team, then his chief of staff distributed the agenda. It was Dave's first day without the orthopedic collar, and he made a lame joke about not sticking his neck out too far.

The first item on the agenda was a team realignment. Dave said he wanted Li, the lead developer on the contact management database, to switch roles with Rachel, the lead developer on the HR system.

"But we're just a few weeks away from a major rollout," Anupam protested. "Li has been working on this release for almost six months."

"Rachel also," Zvi said. "It's her first release since I promoted her. She's very excited and proud of her work. She'll be unhappy if she has to move now."

"But that's exactly my point," Dave said. "We don't want any of our developers to get too personally attached to their code or to a particular user community. This development group is a team, and I want every player to be prepared to rotate positions as I see fit."

In the silence that followed this speech, I glanced around the table, and from the body language I got the feeling that Dave the MD was not well liked by the EDs who reported to him.

My presentation went fine, though in truth it seemed nobody was paying very close attention. Afterward there were a few polite questions, and Dave smiled at me, so I counted it a success and breathed easier.

But the job turned out to be much harder than I anticipated. If my process engineering efforts with Scott and the sales systems team had made me feel like a physical therapist, now I felt more like a community organizer. Apart from paying my salary, Dave provided very little support to me—and no incentives or penalties for the EDs to cooperate with me in achieving the QA goals. He evidently expected me to negotiate with each team and come up with standards and procedures that everyone could agree upon.

It was slow going, particularly when the EDs used the discussions to enact their turf battles. The testers who reported to me had their own agendas and aspirations. Yet we inched forward. We decided it was not feasible for all applications to use the same documents or follow the same methodology. In the end, we settled upon templates and checklists with mandatory and optional components for requirements definition, test planning, test execution, test results reporting, defect tracking, change control, version control, and configuration management.

Barbara was in a similar situation with her Project Management Office. In some respects she had more clout because Dave's boss, the CIO, and the influential business sponsors of our software wanted more insight into our group's development activities. In essence, they hoped to better understand how and where and why their money was being spent. Her first step was the introduction of a mandatory Scope Document for all new projects, along with a review process that determined funding, resourcing, and scheduling. When that innovation proved successful, it was followed by templates and checklists for the Work Breakdown Structure, Gantt Chart, Responsibility Matrix, Risk Matrix, Integrated Project Plan, and Closing Report.

After almost a year, Anupam, Barbara, and I were all promoted. Anupam became an ED, and Barbara and I rose to the rank of director. I got stock options and an interior office with a door.

Barbara and I celebrated with a shopping spree. It was the beginning of the holiday season, and I had discovered that our office building had a basement-level passage into the subway that continued to the underground concourse of the World Trade Center. We liked the WTC mall because its low ceilings gave it a cozy atmosphere. It offered a wide range of stores, from the mundane (shoe repair, photo processing, pharmacy) to the glamorous (clothing, electronics, jewelry). Best of all, it was a place to stroll around in bad weather. I bought a cocktail dress, Barbara bought some fancy boots, and we both bought necklaces for our daughters.

The economy was booming. Pharaoh's business was expanding rapidly. In mid-February, after the bonus checks had been handed out, Dave announced that to keep up with the demand for new functionality in our software we would begin outsourcing maintenance. The plan envisioned that within a year, a third of our group's total headcount would com-

prise developers and testers who were employed by a vendor. Initially these outsourced resources would be located here in our Pharaoh headquarters building, but eventually they might be located at the vendor's facility elsewhere in the United States or offshore. No Pharaoh employees would lose their jobs.

There followed an intense round of vendor presentations, strategic sourcing meetings, and briefings by consultants. It seemed as though many of the important decisions were being made by procurement specialists and lawyers who knew very little about software engineering. Anupam lobbied heavily for an Indian firm, but in the end our CIO selected Quogue Consulting based upon reviews in Gartner and Forrester reports and conversations with people in his own professional network.

A new face appeared at Dave's biweekly direct reports meeting. Frank, the service delivery manager for Quogue, was a weather-beaten man in his 40s with a jet black brush crew cut and a tic in his jaw. His forearms, biceps, and chest had the over-inflated look of a serious weightlifter. During the meeting he sat hunched over, taut like a coiled spring. We learned that Frank had been with Quogue for five years. Prior to that he had served in the Navy, had worked as an operations manager on a rubber plantation in Malaysia, and had supervised the staff aboard a cruise ship. When the meeting adjourned and we stood to go I saw that around his neck he wore a medallion in the shape of a gargoyle.

On our way out he intercepted Barbara and me.

"Ladies." He was smiling, but his tone seemed more appropriate for a sailor in a brothel than a gentleman at a reception.

"Welcome," I said. "We look forward to working with you."

"I wanted to tell you that on my last engagement my team achieved CMM Level 3. I'd be glad to share our lessons learned with you if you're interested."

The arrogance and condescension in his voice irked me, but Barbara had the opposite reaction.

"That's great! Thank you. I'm sure we can learn a lot from your experience," she beamed.

The Quogue invasion commenced right away. My staff testers were redeployed to the applications with the largest product backlog of new functionality, while outsourced resources were brought in for changes to the more stable legacy systems. My tester for the sales systems had quit to go back to school, and Frank replaced her with Rafiq. Alex became the tester for the accounts payable and accounts receivable systems. Natalya joined the production systems team.

My involvement in the hiring process for these testers was: zero. The EDs and lead developers were likewise excluded from the recruitment of Quogue programmers. Following the "staff augmentation" model, Frank wanted us to provide job specifications and let him deliver warm bodies. He also insisted on managing the outsourced resources' workflow, so in the beginning he attended all development team meetings and got copies of all emails

regarding tasks to which his people were assigned. Partly this was because Quogue had its own internal tracking procedures, but it also seemed that he was looking for opportunities to point out our group's weaknesses to Dave so that he could make a sales pitch on how he could do things better and thereby expand Quogue's engagement. In particular, the lead developers considered Frank a nuisance, and they resented his obstructive behavior as gatekeeper when they were trying to integrate the outsourced resources into their projects and teams.

Meanwhile, Pharaoh's business continued growing. Soon it became evident that the data architecture implemented when the company was one-third its present size no longer adequately supported its operations and would seriously undermine future expansion. As much as everyone hated the idea of IT root canal surgery, we were compelled to redesign the central data warehouse and modify all the upstream and downstream systems. Just thinking about it made all the EDs break into a sweat. Our first requirements gathering and test planning meetings featured mood swings from hysteria to despair, followed by a mass updating of resumes.

On the bright side, it was an opportunity for me to lead a very large, mission-critical, cross-functional testing project, and I was excited about the challenge. To ensure that the project management approach and the testing strategy aligned with the Quogue internal processes, Barbara and I began meeting regularly with Natalya and coordinating our teams' efforts.

Our most memorable meeting took place at lunchtime on a beautiful day in July—one of those rare summer days in New York when the humidity is low, the temperature is mild, the air is clean, and an ocean breeze reminds everyone that the city is a seaport. Unable to bear the thought of staying indoors, we got some food to go from the cafeteria and ate it by the sculpture in the World Trade Center plaza.

Natalya was slightly older than Barbara and I, perhaps in her early 40s. She had two children, a daughter who was a freshman in high school and a son in seventh grade. She was short and stocky, with a broad face, prominent eyes, and curly auburn hair. Originally from the Ukraine, she spoke heavily accented but fluent English. She lived with her family in Brooklyn and was in the process of buying a house on Staten Island. Her automated regression tests were the most compact and effective I'd ever seen.

Under the influence of the fine weather, we disposed of our business matters quickly and moved on to personal topics. We chatted about our daughters, our work/life balance or lack thereof, our difficulties with the public schools. Eventually I asked Natalya why she had left the Ukraine.

"I am from Chernobyl," she replied.

It took a moment for the implications of this fact to sink in.

"Were you evacuated?" Barbara asked.
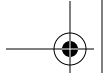
"After awhile. For many days we stayed. The government pretended nothing had happened. We found out the truth from the BBC radio. We left with one suitcase each and did not return."

"That must have been dreadful," I said. "And your health…?"

"So far so good. Many of our old neighbors have grown cancers. I do not care so much for myself, but I worry always about my children."

Soberly we pondered the helplessness of mothers in the face of the world's evils.

All of a sudden Natalya grinned and pointed at a stage on the west side of the plaza. "Oh look! There is going to be a band now!"

At lunchtime in the summer, the World Trade Center often presented a band: one day for jazz, one for rock, one for oldies, one for country. As a tall woman in a cowboy hat shouldered her electric guitar and strolled up to the microphone I surmised today was country. Sure enough, soon she was belting out a rousing, twangy anthem accompanied by a bass player, keyboardist, and drummer. In front of the stage a man in a turban, an Asian woman, two Latino teenagers, and an elderly white couple began to dance. Others followed—some tentatively, some zestfully—but all happily.

"I like the music," Natalya said. "I have never heard this kind before."

"Usually I'm more of a jazz person," I said, "but it's really catchy."

"It makes me nervous," Barbara said.

"Why?" Natalya asked.

"Well, my people are from North Carolina, and when we heard this kind of music we used to cross to the other side of the road as a precaution."

"Why?" Natalya asked again.

"Because…" The music got louder. "…oh, I'll explain later."

The next song was about a woman who gets fed up with her life, packs her bags, stuffs them in the trunk of her car, and drives off down the open road fearlessly. It was irresistible, and together the three of us joined in the dancing.

After Labor Day, when the back-to-school mood had begun to settle in, and the Quogue outsourced resources were productively contributing to their teams' projects, and the database reengineering initiative was ticking off milestones on their project plan, the Pharaoh chief operations officer announced a large-scale simultaneous musical-chairs internal move that affected every department except IT. As the company expanded, employees had been doubling up inside offices and carving workspaces out of every spare nook and cranny. The facilities manager hoped to address this problem by reshuffling everyone into smaller but more ergonomic quarters. The Quogue people, who had been scattered at random throughout the building, were to be housed inside the old bank branch storage space.

The IT group was being spared because the architect had taken one look at our electricity and cabling requirements and pronounced us Not Worth The Trouble, but nonetheless we realized that the chaos among our end users would have a destabilizing effect on our project plans.

At Dave's status meeting immediately following the move, all the EDs reported delays and problems on their projects. However, two weeks later the situation remained unsatisfactory. The metrics I had gathered and developers I had questioned indicated that the Quogue outsourced resources were responsible for most of the issues.

"There has been some disruption," Frank agreed cheerfully. "But the new space is much quieter. It has larger desks and better chairs. From where I sit I can see everyone and keep track of what they are doing. We're going through a period of adjustment, and I expect we'll be back on course soon."

This confident prediction unfortunately proved overly optimistic. Deadlines were missed. Defect rates soared. The Quogue people, formerly admired for their exemplary attendance records, called in sick much more often. Frank stared at his shoes when he walked around the hallways.

Since the initiation of the project, the database reengineering status meeting had been held every Wednesday afternoon in our group's largest conference room. Representatives from all the upstream and downstream application teams summarized their progress and described any issues they had encountered. The database developers discussed changes they were incorporating in the next version they planned to install on the QA server. Testers and project managers also attended the meeting to stay informed. As a time commitment, it was long, boring, and necessary.

Six weeks after the big move, during this Wednesday meeting Natalya distributed some documents that were covered with dark smudges. As it happened, at the end of the meeting everyone else bolted and she and I were left alone at the conference table while we packed up.

Casually, I pointed out the smudges on her papers.

"Does the printer in your new space need maintenance?" I asked.

"No, it is the soot."

"What soot?"

She clapped her hand over her mouth and looked horrified. Shaking her head, acting disoriented, she started to rise from her chair.

"Nothing. It is nothing," she said vehemently.

"No, wait. What soot? What's the matter? Why are you upset?"

To my astonishment she sank back into her seat, covered her face with her hands, and began weeping.

And so the story came out. The ancient HVAC system in the bank branch area had not been cleaned before the new office furniture was installed. When it was finally turned on, after everyone had moved in, decades of accumulated gunk started raining down. Every morning, the Quogue people needed to spend at least half an hour cleaning a thick layer of soot off their desks, monitors, and chairs. By the end of the day, the soot had built up again. Papers had to be kept inside drawers.

"Everyone is coughing," Natalya sobbed. "Vikram's asthma is very bad, and Olga has bronchitis."

"How could facilities get away with this?" I said. "It must be an OSHA violation."

"What is OSHA?"

I gave her a brief overview of the Occupational Safety and Health Administration, American labor law, and worker protection rights. She seemed skeptical.

"These principles are very nice, but they apply only to citizens," she informed me.

"That's not true. Where did you get that idea? Look, we can fix this. I'll talk to Dave and we'll set up a meeting with facilities."

"No, no, please don't!" she wailed. "I'll lose my job. I'll have to pay back $50,000. We just bought our house…."

"Natalya, what are you talking about?" Listening to her fearful visions, I wondered whether the nuclear power plant accident had made her paranoid.

But no: it turned out she had good reason to be afraid. She explained that the Quogue employment contract was based on a two-year "probation." If an employee were terminated during that period, he or she would be obliged to repay the entire amount of wages received to date. Immigrants also risked the loss of their Green Card sponsor and possibly deportation. Frank had forbidden the Quogue people to complain about their new workspace, and had made it clear that anyone who did would be fired.

When Natalya finished speaking she leaned back in her chair, exhausted. Her eyes were dry and she gazed at me with resignation. Never before had I experienced the emotional weight of an adult putting her fate in my hands.

"OK," I said. "I get it. This conversation never happened. But we are going to fix the problem."

I went back to my office, shut the door, and looked for some music to help me think. In my pile of CDs I found one I'd bought recently by the country music band we had heard on the World Trade Center plaza. To the accompaniment of their rousing songs, I called Barbara.

"Have you ever visited the bank space since Quogue moved in?" I asked her.

"No, their people come to us for meetings. It's always been that way, even before the move. Why?"

"Well, it occurred to me maybe the reason they've got adjustment problems in the new space is that they never had a housewarming party."

She laughed. "I didn't know you were so superstitious."

"I thought it might be a nice team-building gesture to surprise them with some breakfast goodies tomorrow morning. You want to join the party?"

"Sure, what can I bring?"

At 8:00 a.m. we arrived outside the locked door bearing doughnuts, bagels, croissants, juice, and a camera. I punched in the security code, but it no longer worked.

"That's odd," Barbara said. "Did you get an email about changing the code?"

At that moment, Rafiq came up behind us and let us in. He looked pleased to see us at first, then apprehensive.

We strolled along a short hallway into an open area surrounding a copy machine and set our boxes and cartons down on top of a filing cabinet.

"Good morning Quoggies!" I called out. "Breakfast is served!"

Heads popped up above cubicle walls.

"Holy Mother of God," Barbara gasped. "It's filthy in here!"

The soot was thick enough to write a person's name across the desks and cabinets. Rolls of paper towels stood sentry at each cluster of cubicles. Many of the Quogue people wore black sweaters and shawls to protect their clothes, and hats or scarves on their heads. A fine black snow wafted down from the HVAC vents overhead.

"Looks like some problem with the ventilation," I observed.

Barbara brushed soot off her yellow silk shirt. "Where's that camera?"

Frank came bounding out of his glass-walled office and tried to stand in front of the camera.

"Ladies! Nice of you to visit. Thanks for the food."

Barbara stepped around him and began taking pictures. I noticed that the vent inside his office was covered with a makeshift cheesecloth filter.

"What does facilities have to say about this air-quality situation?" I asked him.

"They're working on it. They're looking for a special kind of contractor to come in and clean the ducts."

"Have you spoken to Dave about it?"

"Yeah, he told me to keep following up with facilities." He shrugged. "I've seen worse."

"I can imagine."

The pictures did not do justice to the scene, so Barbara and I took it upon ourselves to spread the word. We spoke to every development manager and lead developer who had outsourced resources on their team, and most of them made the time to visit the Quogue workspace. I put an item on the agenda for Dave's next status meeting. I was confident he would recognize the urgency of the problem, and well prepared for the discussion with several alternative suggestions.

The initial results were disappointing, to say the least.

"Dave, I believe there is a relationship between the air-quality issues in the Quogue workspace and the decline in key performance indicators for the engagement," I said when it was my turn to speak. "I'd like to recommend that we escalate the…"

"What do you think?" Dave asked Frank.

"I don't really see a connection," Frank said, "although it would be nice to get those ducts cleaned."

"This is a matter for facilities," Dave told me. "Frank is handling it."

"I understand, and I know he has been diligent, but it seems…"

Dave raised his finger to cut me off.

"In the future," he said sternly, "I would like you to remember that your quality assurance role is limited to software."

I looked around the table for support and encountered a wall of blank faces. In my imagination I heard a sickening thump as my career hit the rocks.

After the meeting, I was on my way to the ladies' room to sulk when Mark grabbed my arm.

"Hang in there," he said. "This was only Round One."

Behind him, Zvi nodded in agreement.

Round Two consisted of a four-pronged under-the-radar publicity campaign. Following Barbara's script, the project managers for all applications that employed Quogue outsourced resources arranged meetings with their business sponsors and described the negative effect the environmental problem was having on the development process. Nick, whose PM portfolio included the legal systems, was dispatched on a mission to review the Quogue contract and to inquire about whether OSHA rules covered vendor employees working on Pharaoh property. Carol invited the CIO to a birthday party in her group, then lured him away for a glimpse of the Quogue workspace. On the pretext of acquiring a Ping-Pong table for the fitness center, Mark visited the facilities manager and questioned him about the plan to clean the ducts.

Dave was not pleased to see the air-quality item on the agenda again for his next status meeting. This time it was Mark who had added it, so I was out of the line of fire.

"I'm not sure why we're still talking about this," Frank said. "Many of the adjustment issues are being resolved, and the engagement metrics have improved."

He had a point. Relieved that someone was finally paying attention to their plight, the Quogue people had recovered some of their earlier commitment to Pharaoh projects. Unfortunately, this did not help their cause.

"We're still talking about it because it is a disgrace," Mark retorted.

Dave told Frank that he was excused from the meeting. After Frank had gone, he faced Mark angrily.

"The moral context you're projecting on this situation is out of scope," he said. "Facilities has indicated that if we want the ducts cleaned we have to pay for it, and it is not in our budget."

"We should not force anyone to work in such an unhealthy environment," Mark said.

"Who's forcing them?" Paul said. "It's a good steady job. If they don't like it they can leave."

"They can't leave," I said. "They have no choice. They're like indentured servants."

"Everyone has a choice," Paul growled. "We make our choices and we live with the consequences."

"How long is the Quogue contract?" Anupam asked. "If we outsource to India instead, we won't have to worry about American laws and standards."

Zvi reached out his hands, palms up. "It was a mistake. The architect, the facilities manager…they forgot, we forgot…who knows; it's done. It needs to be fixed. Let's get all the parties together and figure out a solution, and then we'll see who pays."

"Zvi is correct." Carol Chu was not smiling. "But the systems development budget should not pay. Our CIO should push back."

"Believe me, our CIO is not going to push back." Dave sighed. "Look, we're dealing with contingent labor here. We brought them in to reduce costs. It's not like this is a meatpacking plant."

Being a novice in an ongoing tournament of management politics, I assumed we eco-crusaders were checkmated. Carol Chu assured me that the game was not over yet. The sooty ducts in the Quogue workspace had become hot gossip throughout Pharaoh headquarters. A groundswell of popular sympathy for our outsourced resources was causing ripples in high places.

The participants in Round Three were senior executives attending an off-site strategic planning meeting: the chief operating officer, the chief information officer, and the gen-

eral counsel. Whether they were motivated by a sense of justice or by a fear of contract disputes and embarrassing leaks to the media, they decided that the problem was serious enough to warrant immediate attention. As soon as they returned from their retreat, the COO replaced the facilities manager and hired a contracting firm that specialized in HVAC systems. The general counsel opened negotiations with the architect in charge of the renovation over liability for the duct cleaning costs. The CIO directed a writer from corporate communications to draft an article for the weekly company intranet bulletin honoring Dave for his humanistic principles and his ability to combine fiscal responsibility with a concern for all his workers' health and welfare.

Quogue Consulting's management expressed its displeasure with Frank's behavior during this episode by summoning him to their headquarters for several days of interrogation, penance, and remedial training.

During Frank's absence I got an email from Rafiq requesting that I come to the Quogue workspace to look at some test results on his computer.

The former bank branch space was now immaculate. On two consecutive weekends, the contractors had scrubbed out the decades' accumulation of filth. No soot was falling from the vents. Morning sunshine gleamed off surfaces that were as clean as the night before. The Quogue people had shed their protective layers of dark clothing.

It turned out that the test results were a ruse, and what awaited me was a kind of surprise party. With their boss away, the developers and testers had assembled around the copy machine. Rafiq led me over to the group. Shyly, Natalya handed me an envelope containing a card. On the front it said "Thank You." On the inside everyone had signed his name. Later, when I showed the card to my unimpressed adolescent daughter, I tried to explain to her that the most important achievements of one's career can't always be articulated on a resume.

And so the sick part of our building was healed. Life went back to normal for both Pharaoh employees and Quogue outsourced resources. We completed the database reengineering project—not on time, or within budget, but the business was satisfied with the result, and we felt we had laid a solid technological foundation for the future.

Yet the future for our building and our people was to be anything but solid and normal. On September 11, 2001, the terrorist attacks on the World Trade Center dropped fragments of airplanes and human bodies on our roof and enveloped our neighborhood in a toxic cloud.

For the next week, all was chaos and confusion, and nobody did much work. The following week, we were back in business at an IT disaster recovery site across the Hudson River in Jersey City.

From our conference room window we could see the burning rubble and a corner of our building. Our group was set up in a huge open area, like a trading floor but with fewer screens per workstation. None of our employees had been killed in the attack, but every-

one knew someone who had lost someone. Our new facilities manager, a healthy 43-year-old, had died suddenly of a heart attack September 15 while inspecting the damage to our building.

During that time, all of us were not quite sane.

At Dave's first status meeting, we watched the hellish smoke rise from the pit while we discussed absence codes for the PMO's project tracking database.

"Should we code last week as sick days?" Frank asked.

"I think personal days makes more sense," Carol Chu replied.

"But then they'll be deducted from each employee's reserve," Barbara pointed out.

"The HR system and the timesheet system will be affected," I said.

"Isn't there a category for absences outside your control, like snow days?" Zvi proposed.

"What about overtime?" Paul asked.

"Speaking of overtime," Mark said, "I want to make sure that Natalya gets some recognition for what she's doing."

"We're *all* doing more than is humanly possible," Dave snapped.

"That's true," Zvi said, "but Natalya is running a hotel. She has eight developers sleeping on her floor—ours and Quogue's."

"Why?" Frank asked.

"The developers live downwind in Brooklyn," Mark explained. "Her house is on Staten Island. It's upwind of the smoke."

"We've never tracked overtime," Dave said, "and we're not going to start now."

A roar and a series of loud crashes interrupted our debate. Due to our twitchy reflexes, the entire management team around the conference table leaped up to investigate. We discovered that in the lounge area a man was assaulting a vending machine.

It was Dominic, a Java developer on the accounts payable system. Bald, round-faced, middle-aged, and built like a wrestler, in a frenzy of rage he was smashing the machine with a metal folding chair and throwing in a few vicious kicks for good measure.

"Give me my f__king money back! I want a candy bar!" he howled.

Mark shook his head sadly.

"Poor Dominic. His uncle is a firefighter. He told me that since last week he's gone to seven funerals."

The other people who had been in or near the lounge had withdrawn, forming a semicircle at a safe distance.

Dominic wheeled around and glared at them.

"It ate my last dollar bill!"

The audience took a step backward, afraid that he would hurl the chair in their direction.

"I'll call security," Barbara said.

"No, don't," said Paul. "He's got enough problems already."

"Let me see what I can do," Mark said.

But before Mark could move, Natalya emerged from the cluster of people and calmly walked right up to Dominic.

"I'm so angry!" he shouted at her in a tone that made me flinch.

But not her. She reached out and touched his cheek.

"Yes," she said. "Of course you're angry. It's not fair."

It was like popping a blister. Immediately Dominic's fury began to evaporate. He put down the chair. After a moment he glanced around and seemed startled by the mayhem he had created.

"Come," she said.

She led him to the couch in the lounge and sat down next to him, putting her arm around his shoulder. He rested his elbows on his knees and buried his face in his hands, a picture of devastation.

That evening I ran into Natalya at the elevator when we were both leaving. As we waited, we compared notes about how our kids were coping. We agreed that teenagers were unlikely to disclose their feelings to their parents and needed careful observation.

"You know, I've been meaning to ask you something," I said. "How does this disaster compare with the Chernobyl accident?"

"Oh, they are completely different." She smiled ruefully and shook her head. "In Chernobyl, the government pretended everything was fine, and the news told us nothing. We had no idea what was going on. Here the news tells you everything. I am very glad to be living in a country where the government does not lie to the people."

We moved back into our office building at the end of October. Pharaoh was one of the first major businesses to resume operations within the military security zone. The same contracting firm that had cleaned the HVAC ducts in the Quogue work area was hired to do a much bigger job of scrubbing, decontaminating, and filtering. Despite the acrid odor of burning flesh and other unknown elements that gagged us every time we stepped outside, the air in our neighborhood was declared safe by the EPA.

Inevitably, we moved on. A year later I left Pharaoh to become a consultant and teacher. Anupam finally succeeded in convincing senior IT management that outsourcing offshore
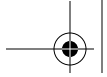
was a good idea. When Quogue Consulting's contract expired, an Indian firm took over their projects and moved the jobs to Bangalore. The engagement grew rapidly, and this time there were many layoffs among Pharaoh employees.

Most of my former colleagues continued their careers in publishing and financial services IT. Scott moved to Australia and started a business organizing scuba diving trips to the Great Barrier Reef. After his divorce, Dave took a very senior job at a major consulting company advising its clients on how to cut costs by moving work offshore. Barbara became the PMO director at a company that designs and manufactures several high-end brands of clothing.

Our office building no longer exists. Having survived terrorism, it fell victim to the Manhattan real estate market. It has been demolished, and in its place are now luxury condos.

The one person I'm sorry to have lost touch with is Natalya. I think of her often, especially when the curriculum in the business school classes I teach focuses on teamwork. I hope one day some social networking website will help us reconnect. I want to know how she and her family are doing. I'd also like to ask her that elevator question again and find out whether she still has the same faith.