

WHITE WALLS

By Stephen Kraus

* * * *

“RUN THAT AGAIN,” JACOBSON said.

The system obliged immediately, respectful of Jacobson’s priority. The image on the monitor reset to the first security checkpoint. Fish-eyed optics stared out through glass doors to a broad plaza lined with olive trees. The glass doors opened, and a single figure walked through uncertainly. The camera zoomed in, focused. The camera-robot’s point of view was only a few centimeters off the floor: the subject seemed to taper upwards, face all nostrils.

The robot scuttled backward on rubber treads. The figure framed in its camera-eye was clearly female now from the less extreme angle. The robot issued a command, repeated it. The woman followed hesitantly, glancing back toward the checkpoint and the glass doors and the sunlight beyond.

The robot’s servos whined. For a moment, the woman’s dark, frightened eyes stared straight into the camera. Jacobson flinched, as if she could see him watching. She brushed her long black hair back nervously with her hand, seeking protection in its thickness and its familiarity. Her face was striking — fine, sharp-boned features with a distant, mournful look. But it was her walk that held Jacobson’s attention: tuned, exact, every movement under absolute control. The clean precision of her steps and the swing of her arms and hips made him realize how complex a process walking really was, and how badly most people did it.

The mild summer afternoon, still visible through the doors behind her, vanished as she turned a corner. She moved between white walls now, raked by fluorescent glare. The harsh light bled all the color from her narrow face; the planes and angles of her cheekbones shone hard as knives.

Jacobson leaned back in his chair, tented his fingers. Except for the display, his office was dark. There were no windows, no carpeting, only blank enamel-white walls too distant to reflect the glow from the monitor.

“Subject’s name?” Jacobson asked. He wondered why he was watching this sequence. He’d just happened on it by chance while browsing through the system. Her name wasn’t any of his business.

“Establish your need to know.”

“I have none. Tell me anyway.”

The system hesitated for a moment. “Julia Sholokov.”

“Why is she here?”

“She’s a subject for robot articulation studies. Transferred from Santa Clara.”

“Ah,” said Jacobson. “Whose project?”

“Kirkendahl’s.”

The woman reached the second checkpoint. A burly technician brushed her clothes, then directed her to step into a pair of white booties. She passed through a sighing airlock and ended up in a room with lockers along one wall. Another technician checked her ID card, pointed to a set of gleaming tiled showers and pantomimed changing into fresh white coveralls. He didn’t say a word. Outer fringe staff avoided speaking to inbound personnel. Jacobson had never really understood why. Perhaps they didn’t want to shout over the restless howl of the air recirculators. Or perhaps they assumed those coming inside were incapable of speech, confusing them with the robots they designed.

Julia removed her government-issue coveralls, glancing over at the technician before unsealing each seam. She needn’t have bothered. He had his back to her. Fringe staff never looked inward. But the security robot’s camera-eye stared relentlessly at her slim, small-breasted body. It seemed asexual in the blue-white glare and rising steam. Even naked, she moved with a precise, fluid grace.

In the next room another technician scrubbed her suit down and fitted her with a hood and a filter mask that covered her mouth.

“What’s happening?” she asked. Her voice was deeper than Jacobson expected, with a tense, vulnerable edge. The mask added a slight rasp. “Is there some kind of contamination?”

The technician shook his head, friendlier than the others. Inside staff. “From here on in it’s a class 100 clean room environment. You’re the contaminant.”

She stepped through another airlock, seemed disoriented for a second, then leaned forward into a roaring wind that stripped particles from her skin.

“Where is she going?” Jacobson asked. Some quality in her posture, in her eyes drew his attention, something rare and terribly fragile. It made him feel protective.

“She has an interview with the director,” the system replied. Jacobson robbed his nose, wondering why.

The template waited in clear fluid, silicon carved to atomic precision. Bases drifted by, guanine, cytosine, adenine. Then thymine, the right one at last. It tumbled above the polished surface, gyrated, twisted, and finally dropped into an L-shaped depression on the template. Molecular locks clicked shut.

A stocky, fortyish woman nodded, and moved her hand across a touch-panel. “That was the last one.”

Jacobson paced between white walls, booties scuffing clean tiles. “Okay, Alice. Detach it.” He felt restless, distracted. His thoughts keep returning to the thin young woman with the precise walk.

An electrical pulse set up a standing wave on the template. The strand it held rippled irritably for a time, unwilling to leave the surface. Finally it lifted clear.

“Encase it,” Jacobson said. “Use a T-4 phage sheath. I’ll be in my office. Let me know when you’re done.”

His assistant turned away from her monitor. She always sat too close to the display, and now it soaked her face in a dull amber glow. “Don’t you want to watch?”

But Jacobson was already cycling through the airlock.

“Cue to the interview.”

The system complied. Julia walked through a sliding door into a bare room. The entire ceiling shone, achingly bright. The director stood near the back wall with his arms crossed. He wore a reflective fishbowl helmet and a loose white suit that disguised his slight build. The airlock door slid shut. Julia’s security robot rolled unobtrusively into a corner. The two figures loomed in the confined space.

The director walked in a circle, his arms still crossed.

“Julia Sholokov?” He spoke in a piping castrato tenor that lent his words an incongruous enthusiasm.

She nodded and looked around nervously, perhaps for some place to sit down. There was nothing.

“You’re a dancer, am I right?”

“Yes. No. I was. I’m an Associated Municipalities conscript now.”

The director waved her last comment aside. “Are you a good dancer?”

She didn't answer for a second. "I suppose so . . . sir."

He took a step closer to her. "Take off your suit."

"Pardon me?"

"Remove your coveralls, please."

Jacobson froze, his face centimeters from the monitor. His fingers gripped the edge of his desk. What was the director doing? He was a strange man: insular, unpredictable, easily agitated. But this made no sense. He'd never shown any interest in women before, much less . . .

The image blurred, then refocused. Julia pushed the white suit down over her legs, her arms shaking noticeably. She reached up to touch her hair, for reassurance, and found only a plastic hood.

"Dance," the director said.

She put her hands to her face. She may have been crying; the robot's optics weren't good enough to tell.

The director took a step closer. "You'll be naked in the articulation lab."

She looked up. "I will?"

"Of course. We're designing robots that mimic human movement. You're their rule base, their teacher. Robots don't wear clothes."

She nodded tentatively.

"Dance," he said.

After a minute she moved an arm to one side. She lifted to her toes, knelt. She closed her eyes, listening for some rhythm in the white noise of the recirculators. She straightened one leg and posed, bent it again and turned. She kept her eyes tightly shut.

The director let her continue for several minutes. "All right," he said abruptly. "Very good."

She stopped.

"We had another woman in a month ago. Very nervous. She couldn't stop shaking. You're quite natural."

Julia touched her cap again. “What happened to her?”

“She’s dead.”

Jacobson tried to extract more information from that statement. He didn’t remember the other woman, hadn’t ever met her. But the director’s voice conveyed no regret, no irony, no threat. Only fact.

His gaze was very steady, but it was impossible to tell where he was looking. Julia seemed uncertain whether to dress.

“How long will I have to stay here?” she asked evenly, knowing she’d earned a question.

The director seemed taken aback. “A few months, I suppose. You’ll have to ask Kirkendahl. He knows the details.” He locked his hands behind his back, finally looking away. “I imagine it’s difficult at first, coming in here. All the procedures, the discipline. There isn’t a lot of that outside, is there? Mandated decentralization, multiple governments vying for conscripts. What do they call it? The Chaos? We don’t see any of that. It’s clean here, orderly. You’re safe. Safer than anywhere else on Earth. There aren’t any contaminants or carcinogens or ionizing radiation. There isn’t a particle in the air larger than a virus. I can’t even imagine going back out there now. None of us can.”

He faced her again. He seemed to be smiling beneath his helmet. “You can get dressed. I’m sorry if I alarmed you. You have an important part to play in our work. I had to be sure of you.”

“Shut it off,” Jacobson said. He had to wait a minute until his voice was steady. “Shut the damned thing off.”

Jacobson pushed back the chair at the end of the long table and stood up. Meetings made him restless. “Questions?” he asked.

“Is anything happening with the microwave power proposal?”

Jacobson looked down the table toward a young dreadlocked project manager. “Faultline Admin is still reviewing it; that’s as much as I know.”

“They’ve been reviewing it for three months. I haven’t had anything to work on since July.”

Jacobson sighed. “I know.”

Alice Freeman, Jacobson’s assistant, raised her hand. “We’re down to six real projects and some maintenance stuff. How are we going to keep this place

going?”

The rest of the staff murmured nervously.

Jacobson robbed his forehead. Alice was right. Contracts hadn't been coming in at the usual rate. Something was changing outside, there was some subtle, incomprehensible shift in the Chaos.

“We've been through this before,” Jacobson said. “The director always sees the trends, keeps us positioned, keeps us independent. He's been doing it for ten years.”

“You're putting a lot of faith in someone whose face none of us have ever seen,” Alice muttered.

“What's he planning now? Do you know?”

Jacobson looked up. He wasn't sure who had asked. It could have been any of the dozen nervous faces around the table. None of them, even the recent arrivals, could conceive of a life outside, in the chaos beyond the white walls. Jacobson least of all.

“The director hasn't confided in me —”

A wall monitor brightened, resolving into a screen-filling view of the director's helmet. His features moved elusively behind it.

Thank god, Jacobson thought.

The flute-like voice started in without preamble: “I know that some of you have been concerned about the air quality in the lab.”

Several staff members spoke at once.

“When are we getting some new business?”

“What's going on outside? We have less and less contact.”

The director stepped back from the camera. He had his hands locked behind his back. “I wanted to outline my plans for upgrading the central eight stages from class 100 to class 10.”

“It's a tape,” Greg Kirkendahl said, almost whining. “You can't even talk to the man in real-time. It's dehumanizing.”

Jacobson looked from one tense face to the next, waiting for the clamor to

subside. He knew what he had to say. He'd tell them that the director was a genius, a magician with the power to keep the Chaos from touching his domain. They'd believe him, accept whatever he said.

They didn't have a choice.

A THOUSAND LASER beams converged, green pin-points darting like startled fish. At the periphery, engineers faced away, looking at monitors where the pinpoints, isolated, defined arms, legs, a torso, a neck. But Jacobson watched the envelope of light itself, the miniature galaxy of blazing green stars.

"Okay," said Kirkendahl, "turn toward me and lift your arm again. Keep the elbow bent." He sounded distracted. His flat, nasal voice ran the words together.

Julia twisted around smoothly and lifted her arm.

"No. I'm trying to get the interaction between the biceps and the brachialis. You have to flex your arm more. That's better. Yes, just so. Once more." He stood up; a tall, angular man, unbending in sections, like a paper clip. "Okay. That's enough. Let's shut down for a while."

The lasers vanished, and the nexus of light became a woman in a black skin suit trimmed, like a cabaret costume, with rows of tiny reflectors. She blinked, adjusting. Jacobson stared straight into her eyes. He didn't offer his hand. No one touched inside.

"I'm Alex Jacobson."

She nodded slightly. Her face was closed, registering nothing. She'd already learned a little about protecting herself.

"How long has this session been going?" he asked.

"I don't know. Four or five hours."

She looked different close up; there was a softness to her face that the camera missed. Perspiration beaded above her eyes, at the borders of her mask.

"Kirkendahl can get absorbed, lose track. I'll tell him to ease off."

"I'm doing fine," she said coolly.

He looked straight at her, forcing her to look back. "I don't think so. I don't think 'fine' is the right word at all."

She searched his eyes for a moment, wondering whether to trust him.

“Can I get you something to drink?” he asked.

Her face changed beneath her mask, opened up. “Oh god, yes.”

The offer was consequential enough. He had to cycle through an airlock and a scrub station to return with a pair of squeeze boxes. Julia drained hers in one long pull.

“Thank you. Are you in charge or something?”

Jacobson shook his head. “I’m responsible for the science done here. That’s all.”

“That strange little man . . . he runs this place, then?”

“The director, yes. His name is Blankman, but I think I’m the only one who calls him that.”

“I met him on my first day. . . .” She shivered. “Can I go back to my room now?”

“Of course. I’ll escort you.”

He spoke to Kirkendahl while she changed back into her coveralls. The tall man nodded rapidly a few times, then returned to his displays.

They walked outward three decontamination stages, down a long white corridor.

“Why isn’t there anything on the walls here?” she asked. “It all looks the same. I walk and I walk, and I feel like I haven’t moved.”

Her security robot paced them, squealing slightly. Its camera head swiveled.

“We have to keep particulates down. We can’t give dust anywhere to collect.”

“Why do you all care so much about dust?”

No one had ever asked him that. It took a minute to remember why. “We do a lot of silicon fabrication. We carve depressions in wafer surfaces the size of individual molecules. Can’t let any particles settle. A dust grain looks like an asteroid at our scale.”

She pointed at the bare walls. “But does it have to be like this everywhere?”

He stopped walking. The corridor narrowed to a vanishing point ahead of them. “No, not really. We’ve gotten a little compulsive about it.”

“You keep saying we. All of you?”

“No. The director sets the policies. He takes a . . . special interest in the air quality in the lab.”

“The director again.” She closed her eyes. “He scarcely seems human. He told me that I’d be naked in that . . . that robotics lab, or whatever it is.”

Jacobson shook his head. “That wouldn’t make sense. You need a contrast between the laser reflectors and the background.”

“Was he being cruel or just ignorant?”

The security robot rocked back and forth impatiently. Jacobson started walking again.

“Let’s talk about something else.”

She sighed. “What else can he do to me?”

Jacobson thought about that. He’d contrived a sort of life for himself here, between the white walls — a compromise, but what wasn’t? He could imagine worse places, worse situations. No problem at all doing that.

He spoke carefully: “I’ve stopped trying to guess what the director is likely to do.”

She smiled faintly beneath her mask and moved beside him. Their shoulders touched every few steps. He shivered with each contact.

“You’re building war machines here, aren’t you? That’s what your robots are.”

“Robots aren’t weapons.”

“But they carry them. I’ve seen robots patrolling the camp where I was stationed. Not much of a distinction.”

“It’s enough.” He shrugged uncomfortably. “Or it isn’t. it doesn’t seem to matter here. We’re so insulated. There’s no connection to anything else. The Chaos can’t reach us.”

“The director said almost the same thing.”

She was looking at him with . . . he wasn't sure. Sympathy? Horror? The mask made it hard to tell. But he could guess what she was thinking. Everyone had their defenses against the Chaos, their way of dealing with its gradual demolition of the infrastructure. Jacobson hid between white walls.

She stopped walking again, stared out at the infinity at the end of the corridor. She was right, Jacobson thought. They didn't seem to be moving. Like walking in a dream.

Her voice came from deep inside her. “This place is like my own private hell. I keep thinking I'm dead.”

Her robot scooted ahead impatiently, its camera bobbing. She pointed at it: “You don't have one of those horrid little machines following you. Everyone else seems to have one.”

Jacobson smiled, a crinkling of his eyes at the edge of his mask. “I designed them. Security knows it couldn't trust anything a robot reported about me.”

A few minutes later they were at the door to her dormitory. They cycled through its airlock and into a long, narrow room with beds along one wall. Several women sat in an alcove at the far end, watching a monitor.

Julia took off her mask and sat down on one of the beds. She looked very pale; her red lips contrasted disturbingly with her skin. Unmasking was the most intimate of acts inside. Did she know that?

“Can I get some books?” she asked. “I never could get used to reading off a monitor.”

“No books. I'm sorry. Dust.”

She nodded, but her dark eyes turned distant and lost.

A rabbit squatted in its sealed cage and looked out with soft, transparent eyes.

“It's ready,” Alice said. She held up a vial of clear liquid. “Anticlimactic, really.”

They reviewed some details: simulations of a rabbit's immune system interaction with their virus. Reaction kinetics. Nutritional requirements.

“Let’s just do it,” Jacobson said impatiently.

Alice nodded. “Would you like to perform the injection?”

Jacobson laughed. “I wouldn’t have any idea how. All I’ve ever done is program computers.”

Alice shook her head and prepared a syringe.

One of his demons popped onto the lab monitor. Jacobson cursed under his breath. Number 24 — the alarm set to trigger if Julia was ever summoned to see the director. He made some excuse and strode back to his office, furious at the lethargy of the airlocks.

She was still two decontamination stages outward from the director’s office, being inoculated for something. At the last stage a scowling woman scrubbed her exposed skin until it shone. Finally, she cycled into the small, bare room.

The director stood with his back pressed against the wall. He seemed to be shaking.

“You wanted to see me?” She was frightened, not hiding it well.

“Yes. Yes, I did.” He was silent for a moment. “Do you remember how you danced for me, the last time you were here?”

She nodded.

“I enjoyed watching you. I’ll admit that. It’s unprofessional of me, I suppose. . . .”

Julia said nothing.

“But, you know, I’m in here all day, just these bare walls and a monitor —”

“I thought the walls were your idea.”

“Yes, of course. They’re necessary. But still, the sensory deprivation . . . can you understand?”

She shook her head. “I don’t understand any of this.”

He didn’t seem to hear her. “Can you help a lonely man with too many responsibilities?”

“How?”

“Dance for me again?”

She stood perfectly still, eyes unfocused. Jacobson found himself holding his breath, digging his fingers into his desktop.

“Do I have to undress?” she asked. Her voice sounded very small against the roar of the recirculators.

“Please.”

Jacobson compressed his lips, wanting to cut the session off, unable to make himself do it.

Julia unsealed her coveralls and stepped out of them, then did the same with her underwear. She put her arms out, starting to stretch.

“Your mask too,” the director said.

She slipped it slowly over her head. It took her three tries to disengage it.

“Shallow breaths,” the director said, stepping to the far corner of the room. “Take shallow breaths.”

She started to move: smooth warm-up poses first, then more disconnected, stylized combinations, tableaux and slashing transitions. She was trying to express something, Jacobson knew that much. Terror? Hopelessness? Anger?

The director stood with his arms held rigidly at his sides. “Stop,” he said, after a few minutes.

She slowed, gradually coming to rest in one corner of the room. Perspiration dripped from her forehead, from her neck, from the place between her breasts. It dried quickly in the ceaseless rush of air. She started to shiver.

The director walked toward her. He was shaking visibly now. He stopped a half a meter away, raised one gloved hand and touched her cheek. Julia turned her head; Jacobson couldn't see her face. The director's hand moved down along her neck, paused for a second, traced one breast, then slid down to rest on her hip.

After a few seconds, the director stepped back to the center of the room. “Thank you,” he said awkwardly. “You can go now.”

Julia picked up her clothes, shivering violently, and stumbled into the airlock.

After eighteen days, most of the rabbit's fur had fallen out. Its flesh had a

mottled translucency. It looked like one of the skinned rodents Jacobson remembered seeing in butchers' stalls during the early years of the Chaos.

"It's beautiful," the director said, watching from somewhere. "It's perfect."

Jacobson nodded. "The animal seems healthy enough, even aggressive." As if in confirmation, the rabbit butted at the glass of its cage with its bullet-shaped head, then bared its teeth in frustration — teeth that shone with the dull glint of stainless steel.

"Maybe we can teach it to use automatic weapons. Save ourselves a lot of trouble with human experiments."

"What?" The director's voice sounded shrill, even for him.

"Never mind." Jacobson just wanted the conversation to end.

"I've never heard you talk like this." The director's tone was smooth again. "Is something the matter?"

Jacobson concentrated on keeping his voice steady. "Yes. I want you to leave Julia Sholokov alone."

He heard the director breathing for a long moment, then only the hard silence of a severed connection.

"Come with me," Jacobson said. "I'll take you to where we can see the sun."

Julia followed numbly, automatically. They traversed one of the endless corridors, rode up an elevator, then entered a room with a table and several simple chairs. One side of the room had a square window, about a meter wide, triple-paned and heavily sealed along its edges. Julia ran to it and pressed her hands and her mask against the glass. The security robot trundled after her in exaggerated zags, trying for an unobstructed line of sight.

Outside, the sun was indeed visible off to one side, filtered by thin clouds. It hung above a line of brown, rolling hills.

"Is it morning or evening?" she asked.

"Evening."

"Is there a door somewhere? Can we go outside?"

Jacobson shook his head. "We're deep inside here. Nine decontamination stages away from an exit."

She still didn't understand what inside meant. Inside was a state of mind. Status in the lab hierarchy grew with in wardness, with the illusion of increasing safety and isolation. Administrators fought for offices on the upstream side of airlocks. Useless decontamination stations were installed to enhance the prestige of those working on their inward sides.

Disappointment registered on her face, darkening its shadows. "Can we stay here for a little while?"

"As long as you like. But you have to talk to me. I'm worried about you."

"Why? Why are you so interested?"

It was a question he'd often asked himself. He still only knew part of the answer:

"You still have the capacity for freedom."

It was something he'd lost, imperceptibly, during his years behind the white walls. "What did you do before you came here?" he asked.

She kept looking out at the sky. "I was a conscript for Associated Municipalities. I cleaned the kitchen in one of their barracks."

"Before that."

She had to make an effort to remember. "I lived with my boyfriend and some other people in Cupertino. I was studying dance therapy. I'm not sure why. There really isn't such a thing anymore."

Jacobson pictured her apartment: shelves stuffed with books, pillows on the floor, house plants hanging from hooks. "What government were you with?"

"We were signed up with Mountain View Unaligned, until the district boundary moved. That put us in the skirmish zone, officially, anyway. It didn't really mean much—there was a curfew and we saw patrols sometimes. But Mountain View Unaligned couldn't service us because they're supposed to be neutral — except that they were providing power and trash pickup during the sixty days it took for us to transfer to the Santa Clara Free State."

Her voice had become a monotone. Boring, even to her. "One of our neighbors reported us—we were in violation of some neutrality provision of the Articles of Decentralization. That meant both governments had to suspend services. We couldn't even use the street officially. Finally, we had to sign a temporary contract with Associated Municipalities —they serviced the districts on both sides

of the skirmish line. That took us out of violation, but then AM suspended everyone's contracts and drafted us."

Jacobson nodded, not quite following all that. It was a pretty typical Chaos story. Everyone he met had one. After a few years, they all began to sound about the same.

"What happened to your boyfriend?"

She shrugged. "He bought into AM's story. They had big plans for him—he's a district administrator or something now. He kept trying to tell me how important he was."

Jacobson nodded again. Municipal employees spent a lot of time convincing themselves of their own significance. It wasn't easy, most often.

"He was pretty much out of the picture by the time I was transferred here. Loss of status to be seen with the kitchen help, I guess."

She turned her back to the window for the first time and leaned against it. The cooling sun touched the hills on the horizon. Her skin turned the color of honey.

"What about you?" she asked.

Jacobson shrugged. "I build robots—mechanical, biological. Whatever we can get contracts for."

He leaned against the window next to her. Despite the stinging showers and the disinfectants and the antibiotics, there was still a musky smell to her skin. He wanted to touch her face, follow the curve of her cheek, kiss her sad eyes. But he remembered the director's hand moving over her shivering body, and he kept his distance.

"It's been difficult, since the Chaos," he said. "Robots used to build things. Now they destroy things, mostly." His voice seemed to come from somewhere else, reedy and uncertain. "But I don't know what else to do."

She turned suddenly to face him. "That's what this place does. It destroys whatever you love, it takes it away from you. I used to love to dance. My body used to need to do it. Now I feel ill every time I warm up."

She looked straight into his eyes. "When are they going to let me out of here? Nobody will tell me. Nobody but you will talk to me at all."

Jacobson looked away. His mask felt suffocating. He was sure for a moment that something was wrong with it.

“Tell me!” She dug her fingers into his arms.

“I don’t know,” he said miserably. “I’ve never heard of anyone leaving. After a while you won’t want to. You start thinking about the Chaos. . . .”

“That’s what the director said. He told me that my immune system deteriorates in this environment after a while. I’d need intensive medical care if I went back outside — the kind that isn’t available to conscripts. I’d probably die in a few months.”

She wrapped her arms around herself. “Everything he says sounds so reasonable. But it’s all lies, isn’t it?”

“I’m not sure. I’m not an expert in immunology. . . .” The director knew everyone’s weaknesses.

“How can you work for him?”

He didn’t answer for a minute. “He gave me a place to build my robots. He gives me everything I need.”

Julia nodded, and Jacobson felt absurdly grateful for her understanding. She moved closer, until their concealed faces were only a few centimeters apart.

“I heard about your rabbit,” she said, “how you’ve turned it into a robot. I’d like to see it.”

“You heard what?”

“I’m almost invisible here. I hear everything.”

It’s true, he thought. There weren’t any real secrets in the lab. There wasn’t much point. “I didn’t think my work interested you.”

“I’d just like to see it.” She spoke very clearly, with a slight quiver in her voice.

“All right. We can go down there now if you like. It’s an off-shift. The lab should be empty.”

Julia walked toward the door with a long last look at the dwindling light.

THE RABBIT paced in deliberate circles around the perimeter of its cage. From time to time the animal glared out at the peering humans.

Its skin was perfectly smooth, almost glossy. “It looks like a bath toy,” Julia said.

Jacobson laughed. “I wish I could take so benign a view.”

In fact, he didn’t know how to see it. There was something shockingly unnatural about the metamorphosed creature. Yet it was unquestionably the greatest achievement of his career.

“It was a normal rabbit before you . . .?”

“Yes.”

“What happened to it?”

“We designed a virus. A simple one. It gradually replaced the animal’s skin and muscles with polymer. It replaced the calcium carbonate and phosphate in its bones with stainless steel.”

Jacobson walked over to a cabinet, opened a drawer. He took out a clear plastic block that held a tiny skeleton made of perfectly formed steel bones.

“An earlier effort. A mouse. I have dozens of different failures stored away in here. In a way, this one was actually too successful. The virus scavenged all the calcium. There wasn’t any left to regulate the hormonal system.”

She stared at the delicate metal bones, hypnotized. “How can that . . . other one live?”

“Its central nervous system is intact, along with the liver and pancreas and bone marrow, and so on. One kind of polymer mimics the action of the actin-myosin fibers that change geometry when the muscles contract —ours curls up into helixes. The polymer is five times as strong as a real muscle. The bones have to be steel or they’d snap in half.”

“Won’t the metal poison it?”

He shook his head. “Orthopedic surgeons have been putting stainless steel pins and artificial joints in people for fifty years. The materials are inert. The metal is absorbed a few atoms at a time by the digestive system. Obviously, what we feed these animals is highly enriched in iron and chromium, but it’s below toxic levels.”

Julia watched the rabbit’s calm, measured walk. “Do that for me,” she said.

“Do what?”

“Infect me with your virus.”

A chill started at the back of his neck. His hands gradually turned numb. “You can’t be serious. The effect is permanent. I have no idea how long that animal can survive. And the virus won’t work with humans. It’s tailored to a rabbit’s genetics. Your immune system will destroy it before it can even get started.”

She pointed at the rabbit, sure of her ground. For all of her innocence, she had lived through fifteen years of the Chaos. “You said that thing is five times stronger than a normal animal. You have to be working on a human version. What other reason could there be for the project?”

Jacobson turned away. “I shouldn’t have brought you here. It’s crazy. This has nothing to do with you —”

She was on another track, not listening. “You’ll need test subjects. Whoever’s contracting for this must be planning to provide them. Conscripts — no one would volunteer. Is it Associated Municipalities? It wouldn’t surprise me. I’m an AM conscript; you could make it official.”

The lab was very quiet. The rush of air all around them obscured real sounds. Racks of equipment threw hard-edged shadows. She gently lifted off his mask, dropped it on the floor, then did the same with her own. She took his face between her hands.

“Look at me, Alex.”

Her hands felt cool and soft and calm. He flinched.

“I’ll kill myself,” she said. “Sooner or later. I can’t stay in this place.”

Jacobson closed his eyes. Would she? His skin burned where she touched it. She might. Or worse, he thought. She might end up like me.

“I’ll find some way to get you out,” he said, talking quickly. “I’ll arrange to get you transferred out of Associated Municipalities. . . .”

“Can you really do that?”

She still held his face. He couldn’t move.

“No. Probably not.”

The rabbit stopped its pacing and looked up expectantly, sensing something.

“Julia, listen, please. Since I first saw you — before we even met, I’ve been trying to protect you —”

“Yes or no, Alex?” She blinked away tears. “Before the director invites me to dance again.”

He looked into her lovely, open face, nothing hidden, nothing untruthful or hard or cynical. With all the technology at his disposal, he had no other way to defend her from the director’s eccentric cruelty, from the white walls. It had come to that. His virus was the only protection he could offer.

He had to try twice before he could force himself to speak. “The process takes months. Years, really. It’s probably terribly painful. We really don’t know.”

She didn’t answer.

“I’ll be monitoring you. If anything goes wrong, anything, I’m giving you the antibody that kills the virus.”

She nodded slowly, her thoughts already elsewhere. She watched the rabbit; fellow travelers.

“Alice will have to perform the procedure,” he went on. “You’ll have to take her into your confidence. Maybe she’ll be able to talk you out of it.”

Julia’s reflection on the glass cage was paler than the rabbit’s plastic flesh. “Well my teeth turn to steel too?”

Jacobson nodded dourly. “Yes. It doesn’t matter.”

“Why not?”

He stepped back, away from the electric contact of her hands. “Because you never smile anyway.”

The director strode across his bare white room, legs stiff, hands clasped tightly behind his back, a fine edge of rage driving his step.

The room’s floor rose at a slight angle. The ceiling tilted down and the side walls angled in wards. The effect was a subtle distortion of perspective. As long as the director stayed at the back of the room, he looked taller. Obvious, really. Transparent. But Jacobson was certain that no one else noticed.

“Alex, do you have any idea how much power we consume?” The question was rhetorical. Jacobson didn’t bother to guess.

“Three hundred fifty-one gigawatt-hours every day.” Another dozen short, hard strides. “Our internal generating capacity is just under one tenth of that. We’d be able to keep life support going, maybe.”

“Is someone threatening to shut down our power?”

“Not precisely. We’re on the University phantom grid. Berkeley’s reactors transfer the power we need onto the Contra Costa grid, and they transfer it to us. Contra Costa charges a fee of 0.03 in hard currency per kilowatt-hour to cover their life-cycle costs. They’re proposing to raise it to 0.60.”

Jacobson nodded impatiently. This sort of thing was the director’s problem. He wasn’t sure where he fit in.

“That’s a lot of hard currency, Alex. More than enough to squeeze out our operating margin long term.”

The director always thought long term. It was his most refined skill.

“Who runs the Contra Costa power grid?”

The director stopped walking, faced him. “It’s a collective. The principal partners are Faultline Admin and Associated Municipalities.”

“Our customers.”

“Our customers, yes.” He resumed his pacing. “It’s odd. They’ve never challenged us before. Something’s changing out there, some balance is shifting. Still, you’d think they would have more sense. We automated their main switching station and most of the outboard ones. We’re still networked with that system, I believe?”

Jacobson nodded, finally seeing where the director was headed. “You’d like them to have some technical difficulties?”

“Nothing too catastrophic.”

Jacobson always felt awkward in the empty room. He didn’t know what to do with his arms. He tried folding them, taking a stand. “I’m reluctant to do that.”

“Why?”

“I don’t want to see your influence extend outside this building.”

The director closed his eyes. He actually seemed to be counting to ten. His reply was convincingly mild. “Either my influence goes out, or the Chaos comes in.”

Jacobson felt a blood vessel begin to throb at the side of his head. Which was worse?

The director still sounded calm, but his body was rigid, stretched tight. “Just send them a message for me, won’t you?”

Jacobson sighed. “As you wish. Is there anything else?”

No answer. Jacobson headed for the airlock. He heard the director’s acute voice over the squeal of the door. “Alex.” Jacobson turned around. “Yes?”

“I’m all that stands between us and the Chaos. Remember that. Always remember that.”

Then the airlock clicked shut and air rushed in from all sides.

Her skin glistened in the green laser glare. It seemed unnaturally smooth, translucent, supple. She worked tirelessly, hours without resting dozens of flawless repetitions.

Jacobson waited until Kirkendahl’s preoccupied staff drifted out and the lights came back on. Julia remained in position, seated, one leg extended.

“You wore them out,” he said.

She came back slowly from wherever she’d been, looked up. “I’m a robot, teaching them how to build robots. I don’t suppose that’s occurred to anyone.”

“Kirkendahl doesn’t know what’s happening to you. I don’t think anyone does. Not yet, anyway.”

Julia shook her head. “The blind leading the blind.” She stood up, stretched. “You need to do another examination?”

“Yes. At your convenience.”

She changed out of her glittering black suit and they walked back to Alice’s lab together. Her step seemed different, stiffer, more studied. The polymer was less flexible than skin. Perhaps that made a difference. Or perhaps she was still getting used to her new body.

“The tactile sense seems strange,” Julia said.

“Your nerve endings are intact,” Jacobson explained. “But they’re operating in a different environment. Your brain will adjust, I expect.”

She nodded, a little jerkily, then lapsed into thought.

After two months, the transformation of her muscles and flesh was half complete. The bones would take longer, two years or more altogether. Everything had gone better than Jacobson could have hoped. She claimed to feel nothing worse than a dull ache in her joints, though her face often seemed to betray symptoms far more intense. He kept expecting her to react with horror to the latest transformation, but the changes only made her more thoughtful. It was Jacobson who grew increasingly horrified.

They stepped through the airlock into the lab, and Julia shook off her haircap. Her head was perfectly smooth.

Jacobson gasped. “Your beautiful black hair . . .”

She laughed. “It’s been falling out for a week now. My head feels so light.”

He remembered the first day he saw her, touching the thick, dark braid for reassurance.

“Watch this!” She ran to one wall and took four running steps through the narrow space between lab benches. She cartwheeled, then flew two meters into the air, descending like a diver, back and legs forming one smooth arc. She landed slightly off-center, but recovered quickly.

“I never used to be any good at this.” She smiled broadly. “In another few weeks I’ll be the finest gymnast in the world.”

It doesn’t count, Jacobson thought. You have to be human for it to count.

“And look.” She picked up a steel dewer and squashed it flat with one hand. The flask whistled where its vacuum died. “You know, Alex?” She was suddenly serene, staring out across the benches and glassware and the ultracentrifuges. “I don’t think I’ll ever be afraid again.”

The lights went out.

Machines spun ponderously to a halt. Monitors zagged to black. The howl of the air recirculators faded, leaving a ringing silence. Everyone stopped, paralyzed, listened to their heartbeats, watching retinal ghosts of the white walls.

Ten seconds passed, then ten more. Emergency lights flickered on. Fans whispered, rising in pitch. Jacobson sat by the monitor in his office, waiting for a call from the director. It didn’t come for almost half an hour.

“I take it the Contra Costa power grid called your bluff,” Jacobson said mildly.

“I can’t get the chairman to answer my calls. What did you do?” The director sounded short of breath, chopping off the ends of his words.

“Nothing special. I dropped the voltage selectively in different neighborhoods. On the geographical display, the brownout spelled out an insult to the chairman’s mother.”

A moment passed, and the director began making a repetitive, high-pitched sound.

Dear god, Jacobson thought. He’s crying.

WITH THE corridors dim and the machines silent, Jacobson was astonished at how empty the lab seemed. Small clusters of junior staff sat in their dormitory rooms watching monitors linked to the outside cameras -cameras that showed crowds of onlookers staring silently at the building. An occasional lone figure strode the hallways. But most of the workspaces and offices felt as if they had been deserted for centuries.

No one had actually left the building—the system assured him of that much—but as he walked restlessly past the labs and the commons rooms, he overheard fragments of a hundred hushed conversations that could concern no other subject. The meals in the cafeteria showed even less variety than usual, prepared largely from imperishables. Had supplies of food been cut off as well? Cloistered in his office, staring at his blank monitor, even Jacobson had to wonder what would happen next.

“How long have you been sitting here in the dark?” Julia asked.

He looked up calmly. For some reason, her sudden appearance hadn’t startled him at all. He’d been waiting for her, he realized. Waiting for something.

“Your door was open.”

She stood between his desk and the single emergency bulb, unmasked. Her security robot lurked in the indistinct shadows at her feet. Her skin was translucent now, and the light shone through the edge of her silhouette, so that she seemed to be illuminated from within.

“What are your plans?” Jacobson asked, trying to conceal his awe.

“I’m leaving. The process is slowing down; I can tell. I’ve stopped feeling hungry when I look at a piece of rusty metal or a chrome-plated tool.”

“You’re leaving?” he asked. He hadn’t really heard the rest. “No one can stop me. I doubt anyone will even try.”

“But your bones won’t finish changing for months yet —”

“I know. It isn’t important. I’m ready now.”

Her voice sounded flat, metallic — the reduced flexibility of her vocal cords? — but her confidence came through clearly enough.

He’d lost her, he realized.

She smiled, the plastic at the corners of her mouth bunching up more than skin would, exaggerating her self-assurance.

“Come with me, Alex.”

He shook his head slowly. “After all this time, I don’t think I’d know how to leave.”

“I’ll tell you how.” She leaned forward, put her hands on his desk. “Give yourself the virus. You know it works now. You know it’s safe.”

He turned away as if he’d been struck.

“Alex, listen to me. You can’t know how it feels — it’s like electricity, like fire.” Her voice pulled at him, fierce, seductive. “Come with me,” she said again. “You and I — we can live forever.”

For a lunatic, dislocated moment, he could imagine it: the two of them prowling the edge of the Chaos, spawning a new race. Smooth-skinned, steel-jointed, invincible.

We can live forever.

He squeezed his eyes shut, blocking out the dark room, blocking out his monitor and Julia in her shroud of light. Nothing in his experience had prepared him to be an outlaw. He’d chosen isolation, yes. But another kind — a monastic life, tranquility and order amid the torrent of the Chaos.

Jacobson stood and took both her hands. Her skin felt smooth, fragrant with the bittersweet perfume of hydrocarbons and lubricants. He shook his head.

She disengaged her hands gently. Her security robot whistled a page. “Julia Sholokov.”

She turned toward it, irritated. “What?”

“The director would like to see you.”

She spoke very clearly: “Tell him to find someone else.”

The robot digested that for a moment. “Follow me, please.”

The machine set off toward the door. She ignored it. The robot stopped, reversed direction, and rolled back until it nearly touched the hem of her coveralls.

“Follow me, please.” Quite a bit louder this time.

She stared straight into its camera for a moment. Almost casually, she swung her foot to the robot’s midsection. The machine lifted in a silent arc and crashed sideways into the doorframe. It slid to the floor and pitched over onto its back, treads spinning.

Julia stood very straight and still, arms at her sides. She looked down at herself: “What do you think, Alex?”

Jacobson heard a hint of her old vulnerability. It ignited a sudden hot flush of pride in his creation.

“Magnificent,” he said. “Nothing less.”

She smiled, framed for the last time in the doorway, charged with light.

“I want to see your face,” Jacobson said.

The director turned away from the camera, hands knotted behind his back. “What happened to her?” he asked. “She seemed different, just before she left.”

Recent events had affected him. He sounded distracted; he nodded his head in small jerks.

“It doesn’t matter now,” Jacobson said mildly.

“Tell me!”

Jacobson shrugged. “I treated her with my virus. You were . . . close to her. You must have noticed.”

The director seemed paralyzed.

“You don’t know much about women, do you.?”

The director's voice slid up in pitch again: "Shut up, Jacobson."

"I wondered why you chose her. You've always ignored the other women in the lab. You seemed afraid of them. But Julia had a dancer's body, like a young girl's."

The director strode off the monitor, moving to a corner the camera couldn't reach.

"Come back here," Jacobson said. "I want to see your face."

The thin voice came from far away: "I have to congratulate you, Alex. You've succeeded beyond anyone's expectations. The virus . . . exquisite! Technology as a catalyst for evolution —"

"Don't change the subject, Blankman."

The sound of the pacing footsteps stopped. "I want your virus, Alex. I want you to infect me."

"What?"

The director's voice whistled with excitement. "I want to leave the lab. I want to find her."

Jacobson felt something contract deep inside his chest. He pictured the director as a robot, a polymer and steel minotaur emerging from his labyrinth, abroad in the great wide world . . .

"Show me your face," he said.

Hesitantly, the director moved into view. He put his hands to the side of his head, slowly lifted his helmet. A narrow, pale chin appeared, perfectly smooth. Next, concave cheeks with no hint of color. Finally, frightened blue eyes and a strand of sand-colored hair hanging down over a high forehead. It was the face of a child of twelve or thirteen.

"I never . . . grew up," the director said quietly. "The stress of the first years of the Chaos. Poor diet. I don't know."

Jacobson nodded, feeling a crushing weariness. The helmet was better. He could hate the helmet. He couldn't hate the face beneath it. "You'll have to come out," he said, "out as far as Alice Freeman's lab."

The director nodded. "When?"

“Meet me there at 06:00.”

That was two hours away; time enough to decide what to do.

Jacobson hadn't been so far outside in years. The glass doors of the main entrance were visible through an open airlock and a long corridor. The airlock was meaningless, but he hung back anyway out of force of habit. The airlock station and the front desk were unstaffed. Shabbily dressed civilians wandered along the corridors, staring quietly at the open doors and the white walls.

Jacobson brushed at his sleeves. He stepped back as an old man in faded coveralls shuffled by, trailing particles. With the depletion of hard currency, the fringe staff had left, unwilling to accept central government scrip. But deeper inside, the lab's activities were back to near their normal level. Jacobson appreciated the director's administrative gifts all the more as the responsibilities gradually fell to him.

He walked back down the corridor, inward, tracing Julia's route on her first day. The path seemed less surreal now, merely sterile and dull. He reached Kirkendahl's lab through two open airlocks and another that was still in operation. Julia's ghost haunted the room on a dozen monitors; her dismembered limbs still turned and flexed in glowing wireframe green.

He walked through the labyrinth, past empty labs and dormitories, past dark power distribution stations and decontamination facilities. One technician guarded the last airlock. Jacobson nodded to her and cycled through.

The director stood propped against the far wall, his head slumped onto his chest. His flesh was fully transparent in places. Silvery bones and pulsing blood vessels showed through the skin of his face and one of his hands. He was unintentionally fascinating; a sort of museum exhibit.

“The air tastes very stale,” the director said. His words came slowly, accompanied by a musical creaking. “I can hardly abide breathing it.”

“Your imagination,” Jacobson assured him. “The particle count is still below a thousand per cubic foot.”

The director shook his head infinitesimally. The effort caused him obvious pain. “Too high. Spores of the Chaos, blowing through the airlocks — like an infection. Leads to internal disorder. Inevitable. You'll see.”

Jacobson nodded sadly, wishing that filtration equipment could really stop the Chaos.

“What did you do to me, Alex?”

The question sounded surprisingly clear, as if he'd been granted a final moment of lucidity.

“I inoculated you with one of the earlier strains. The polymer it synthesizes is disordered, brittle. Like glass.”

The director's eyes widened. With a shaking, agonized effort he brought one arm up and extended his index finger. Tears welled at the comers of his frozen eyes.

“Why, Alex? We used to be friends.”

“I couldn't let you leave. I couldn't let you find Julia.”

The director's extended hand curled slowly into a fist. The index finger began to bend, then separated with a singing crack. For a moment, the finger hung suspended in the bellow of the air recirculators. Then it smashed to the floor in a spray of plastic shards and lay glittering in the hard fluorescent glare from the white walls.

* * * *

“White Walls” is Stephen Kraus's third sale to F&SF. (His other two appearances were “Behind the Barrier” in December, 1990, and “In the Land of Grass” in August, 1992.

He says the idea for “White Walls” came from a conversation he had with a man who worked in a clean room where silicon wafers are fabricated for integrated circuits. “Astonishing precautions have to be taken to avoid dust contamination showers, complex air filtration systems, special suits, washdowns. It's as if he were entering a different world every time he goes to work. I wondered what would happen if people had to live in an environment like that permanently.”