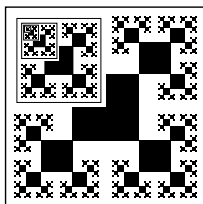


WALDEN 3.0

Fiction



Contents¹

Walden 3.0 (Fiction)

Chapter Title	Page	(Main)
Prologue	169	(ix)
1. Arrival	172	(1)
2. Monitor Traffic	178	(18)
3. Identify People	185	(20)
4. Track Data	190	(36)
5. Track People	197	(52)
6. Private Lives	206	(66)
7. Conversations	214	(86)
8. A School Visit	224	(97)
9. Evil Influences	232	(111)
10. Dinner Time	239	(124)
11. Catch a Hacker	249	(134)
12. To Stay or Not	261	(144)
13. Epilogue	271	(152)

¹Here is a fictional account of a small American town using technology described in the non-fiction part of the book. In fact, the town jokingly refers to itself as “Walden Three,” after B.F. Skinner’s novel *Walden Two*.

Topics in each chapter of the fiction correspond to those in the chapter with the same number in the non-fiction part. The page of each matching non-fiction chapter appears in parentheses at the right above.

Prologue

Sunday evening, March 22

From nearly a kilometer up, a bird's-eye view, the town was a spread of lights in the growing darkness—lights like Christmas strands along major roads, scattered points in residential areas—a typical smaller American town resting in the cool, still evening, bright stars overhead. Slowly the floating viewpoint shifted down to half a kilometer above. A dark river marked the eastern boundary, with lights along a highway spanning it. Barely visible railway tracks followed the west edge of the river; a freeway ran north and south a kilometer or so to the east, well outside the town proper, but a blaze of lights showed a satellite of development where the freeway met the road into town. The focus dropped further: to a quarter kilometer—then lower yet. This was Everytown, a stereotype of such places—cars, gas stations, grocery stores, a strip shopping center, bars, what looked like a college—nothing unusual, nothing special. The viewpoint purposefully moved west over the town to a range of cliffs and low hills on the western border. Down to fifty meters—still well above the tree tops. A camera lens adjusted, and the view zeroed in on strange silhouettes moving from bush to bush, hard for a person to see, but clear to the camera's CCD enhanced sensors. As three men reached the top of a hill and paused, the camera could resolve details of facial features. Two of the men carried tools; the other had a handgun ready.

One figure jerked away from shrubbery. A directional microphone picked up his voice. "Dammit, there are thorns here."

"Quiet!" whispered another figure. "And go slow—nothing sudden. You're almost to the camera I found two days ago. Up ahead and on the right, in that tall maple tree."

The lead figure, shorter than his two companions, awkwardly pulled himself into the tree and slipped a sack over the camera.

“Not much time now.” He followed a wire from the tree into the ground. Frantic digging with collapsible army shovels uncovered a metal box.

“We’re in luck. I would guess this is a relay station for cameras on the west side. We’ll cut the wires and destroy this box. Get ready now. With a broken circuit they may send someone right away.”

Another figure spat at the base of a tree. “I’m not scared. We’ve got their cameras spotted now, and we know which are fakes. Just go around them and take them out—it’s easy. But when do we get our money. Tell Hoffmann to get out his checkbook.”

“You’re not to mention that name, or there may be no checkbook.”

The third figure put in, “A fat checkbook—that weasel would push drugs to his sister if there was money in it.”

At a gesture, one man cut several wires, while the third wrenched open the box with a crowbar. He jabbed the crowbar viciously into the electronic innards several times.

The leader remained calm, matter-of-fact, running his hand through close-cropped hair. “That’s not repairable. Now make tracks, boys. You know the plan. And when we get to Mama Blue’s, don’t just sit together in a booth. Mingle, or nobody will remember us. Make people think we’ve been there all night.”

“What about this damn crowbar? And the shovels?”

“Give them here,” the leader said. “I’ll stash them along the way to pick up later.”

The three men half-slid, half-lowered themselves down a gully to a path. They jogged along the path and at its end dispersed in three directions.

Unseen and unsuspected over them hung a curious shape, partly hidden by trees. Three meters long and painted flat black, it drifted in the direction of one figure on the ground, with a hum of tiny fans and a whirl of adjusting cameras, both apparently too faint to hear below. As the shape neared a road, it resolved against the sky into a blimp, some gas-filled balloon, like a child’s remote-controlled toy.

Elsewhere, several men stared at two monitor screens showing scenery below the blimp. Too open, too exposed, they decided. After a brief discussion of the recorded voiceprints, they sent commands to discontinue this surveillance. The fans worked hard, turning the blimp from the figure below. Hanging video cameras retracted to a long-range view as the blimp headed after other prey that night.

1. Arrival

Sunday evening, March 22

Martin Davis was late getting to Ralph's house, driving too fast even for light Sunday traffic. He'd come 45 miles north from the nearest good air connection and had intended to arrive before dark, but the freeway was full of potholes made worst by a spring freeze. The cool air through an open window was a relief on his face. Finally a sign appeared: "Welcome to Rockcliff, Home of the Raccoons, Population 34,000." The highway continued north along a river, while an arrow pointed to an off-ramp and underpass for the town toward the west. He headed west over the river using an old-fashioned bridge and saw the last pale glow where the sun had set. The road went under north-south railroad tracks before entering the town. Ralph had sent a hand-drawn map. Three turns and he was in the driveway. The house stood off by itself, in the midst of evergreen trees. He crossed the lawn, missing the sidewalk in the dark, but found a faintly lit doorbell. The hallway light came on at once, a huge man threw open the door, and his friend Ralph Barnes gripped him in a bear hug.

"Martin, I'm so glad you're here." Ralph held him at arm's length. "How long has it been?"

He struggled free. "How long should it be? Five years, I think." Ralph looked older than Martin had remembered, his light-brown hair thinning on the top now. He'd always been large, but was larger yet, just shy of overweight—making a contrast with Martin. Ralph wore his standard khaki pants and white shirt. It was like a uniform; Martin had never seen him dressed any other way.

"Where's your luggage?" Ralph said as he ushered Martin into an entryway.

“In the car, where else? That and my little portable computer. I should have left it home; I’ve been paranoid about someone stealing it.”

“It’s probably safe now.” Ralph backed up a step. “But let me get a good look at you. You’re haven’t changed at all. How do you keep from putting on weight?”

“It’s the hectic life I lead, traveling so much.”

They moved into the living room. “How about a drink? Cognac?”

“Sure.” Ralph poured two small liqueur glasses, while Martin looked around. The room was stark, with simple furniture and bare white walls. Through a doorway he could see several computers on tables. He downed half his glass, then gasped.

“You’re supposed to sip it,” said Ralph.

Martin got back his breath and resolved to say what was required. He had steeled himself for this moment, but it was still hard when the time came. “Ralph, I just wanted to say how sorry I was about your daughter, little Kelsey. I didn’t hear about her for six months, and then I never wrote like I should have.” Ralph’s daughter had died in a wreck with a drunk driver when she was a year old, but Martin didn’t know any details.

Ralph’s distress was plain to see. “I don’t think about it much anymore. So long ago, nearly four years now—just part of life. The drunk who killed her did go to jail, but he may be out now. I don’t even remember his name; I don’t want to know it.”

There was a long pause—Martin was not going to touch this subject again, but Ralph went on: “Did you know that I later divorced? Janet and I didn’t have a strong marriage, and this was too much. She—she couldn’t get over it—just sitting around staring at the wall, and I was no help to her. She’s doing better now—remarried even.”

Martin finished his cognac and decided to bring up a new topic. “Tell me, where’s the fancy security system you bragged about. Everything and everybody looks asleep. I expected at least one checkpoint.”

Ralph finished his drink, too. “It’s a lot more subtle than that. Tomorrow I’ll show you the log entries of your arrival. Parts of them anyway. I hope you weren’t put off by my suggesting business *and*

pleasure with this trip. As I mentioned, we can pay you a small consultant's fee, but no big hourly rate."

"The pay isn't important, and besides, you'll get what you pay for. I'm no detective; I've never chased down any criminals. But the problem does sound interesting. If I understand it, you have a security breach, and you think it's an inside job."

"Someone leaked confidential health data to the newspaper and has spread misinformation using flyers he prints himself. It's about local issues and complaints, so very likely someone in the town is doing this. An outside hacker wouldn't care about this data. The data is protected, which indicates computer skills—not so common around here. That's why I thought of you: set a hacker to catch a hacker. I remember when *someone* crashed the whole campus network."

"Yeah, and *someone else* kept them from expelling the someone. I haven't forgotten your help."

Ralph smiled indulgently. "You didn't mean any harm—just playing games with your hacking—the best student of a young faculty member. I wanted to keep you around."

"Well, I managed to turn my hacking hobby into a profession. But what's so sensitive about your leaked health information? Why would someone bother with it? Does the town government have any secrets?"

"I started to explain on the phone, and I'll give you more detail tomorrow, but in brief we've been using computers to prevent crime and improve security for the town's citizens. A few of these citizens don't like our approach—they say we're taking away their 'freedom.' The leaks are meant to embarrass those of us running the town, to discredit our policies."

"And are you embarrassed? Can you defend your policies? Do they deserve to be discredited?"

"Of course they don't, I mean I can—of course I can defend our policies. I'll be showing you what we've accomplished in this town in just three years. It's impressive. I'm proud of it."

"I still don't understand the problem," Martin said.

Ralph explained that there was leaked data about individuals, data he himself couldn't access without subverting the controls. "Whoever

this is,” Ralph said, “he’s making it sound like we’re misusing confidential data, when we’re not. It’s a bigger deal than you might think. You see, we consolidated the town’s health records. All sorts of advantages, but people are worried about confidentiality. Then these leaks came along. We even held a town meeting about the issue. I saved one of the hacker’s messages for you to examine.” Ralph got up to fetch a bright yellow sheet from a table in the small dining room.

Large letters at the sheet’s top shrieked in headline form: “Rock-cliff Invades Privacy, Shuts Down Freedom!” Martin read through the rest, a tirade against the surveillance used by the town. The pamphlet went on, “Do you really want constant monitoring of your personal and private activities?” At the end it revealed details about the health records of four local people, one of them Ralph himself.

“Ralph, I didn’t know you had high cholesterol levels.”

“That’s bad enough,” Ralph said, “but at least the hacker has avoided truly sensitive data, like sexually-transmitted diseases.”

“You don’t mean ... ,” Martin started.

“No, no, not *me*,” said Ralph indignantly. “I just meant that he hadn’t destroyed any careers, as he likely could have done.”

“So you want me to install traps, snoopers, that kind of stuff,” Martin said.

“Exactly. I hope you brought the software we talked about.”

“I brought some software. I can fetch the rest over the net. But right now I need a toilet.” Ralph directed him down the hall. Above the commode was a neatly-lettered sign: *To operate this device, please follow these simple instructions: 1. Pull chain gently, but firmly. 2. Hold down for exactly 5 seconds. 3. Then release. Thanx. –The management.*

Back in the living room, Martin sat down on a short couch. A gray cat jumped into his lap, and he started idly petting it. “Cheeky cat here, but they all are. OK, can you give me more of an overview, more background about this town? How did you get started working here? With your credentials, your Ph.D., I expected you in a fancier position.” Martin thought maybe he was going too far. “Uh, sorry. I’m not even sure *what* your position is.”

Ralph leaned back with his feet on a cushion. “No apology

needed. I know this is a small town. But not a hick town—that’s a big difference. I’m in charge of data processing for the city. It’s a unique situation, because I work closely with the Police Chief—Rollins is his name. Paul Jordan under me handles the payroll and routine matters. It was just a lucky break that I interviewed for the job. A friend from college, Becky Phillips, referred me, but I didn’t see how far they wanted to go till the interview.”

“And who are ‘they’?” Martin said.

“The City Manager, the Mayor, the Police Chief, two councilmen, two other influential citizens, and my friend Becky, who is still working here as an education consultant. They interviewed me as a group. They had rough high-tech plans, rough ideas of what they wanted. But I put it all together—well, with help from Becky. I know this may sound silly, but some ten years ago a phrase came up in a course. I don’t remember the course, who said the phrase, or how the discussion proceeded, but that one short phrase is burned into my brain, like non-erasable memory. Whoever it was, student or professor, said this: ‘What if crime were impossible?’ All through graduate school I couldn’t let it go. What if we could arrange our technical society so that crimes were physically impossible? I thought of all sorts of ways one could take a crime and just make that crime into an impossible event, a non-crime. With no crime there’s no search for a criminal, no incarceration, no trial, no punishment. The city manager actually had much less in mind, but he and the others got excited along with me at the interview.”

Martin thought the idea of impossible crime sounded typical for his friend—always chasing some obscure, elusive goal. “I hate to rain on your picnic, but are you going to make it impossible for me to pull out a gun and kill you right here?”

“Of course not, though mind you, we could do that sometime if we wanted to. We can’t make all crimes impossible, but we can get rid of many, and we can fix it so people get caught for most of the others. Don’t misunderstand, we use the old methods here too: police on bicycles, for example, and dogs. But even there we have high-tech bicycles with computer links. And the dogs have computerized collars to give their position. Are you a science fiction fan?”

“Not a fan, but I’ve read some. Why?”

“Do you remember van Vogt and his ‘Weapon Shops’?”

“Sure,” Martin said. “He put guns in his books that could only be used in self-defense. I see where you’re heading. I enjoyed the books, but the ideas behind them were far-fetched—not remotely reasonable.”

“I agree, but I think we can get the same results. All the mechanical widgets around us are getting more complicated and more computerized, more intelligent. You name it—from VCRs to washing machines. We should be able to keep tighter control over just what can be done with them. Fix them so they only work where we want, and how we want.”

“Hold it,” Martin said. “Who’s the ‘we’ here? An elite deciding for the rest of ‘us’?”

“Why, there’s no special ‘we’ in this case. Companies will manufacture electronic goods that won’t work when stolen, and consumers may elect to buy them, if they think the crime-proof features are worthwhile. Then you could stop worrying about your laptop being stolen.

“But it’ll take more than one chat to tell you what we’re doing,” Ralph continued, “and you look tired right now. Tomorrow I’ll show you our setup.”

Ralph led the way to a spare bedroom. After a few explanations, towels and blankets placed on the bed, Martin settled down alone. No matter how tired, he always had trouble falling asleep in a new setting. He mulled over what Ralph had said. Even if society could make crime impossible, should it really do so? A “Do Not Pick the Flowers” sign—you bend to pick one anyway and get a violent electric shock. What manner of world would that be? It sounded like slavery, total control. But should you let people pick flowers if they’re not supposed to? Maybe you could let them pick a flower and make them pay a fine later. Maybe you could keep them away from the flowers. He slept restlessly. All night long, it seemed, shadowy individuals in dreams watched him, told him what to do, told him where to go.

2. Monitor Traffic

Monday morning, March 23

A lone car drove into town through light mid-morning rain. In Ralph Barnes's office at City Hall, Ralph stared with his friend, Martin Davis, at a yellow icon of a car moving on a glowing computer map of part of the city.

Even without a good night's sleep, Martin had gotten up for his usual three-mile run, only to confront a dreary, cold morning. He gave up the run after fifteen minutes when it started to sprinkle. At least he'd seen part of the town—so small, so many trees, so rustic—houses spread so far apart. On returning to the house Martin found a redbird in formal combat with his rental car—flying to the outside mirror, attacking, retreating. He and Ralph had finished coffee and doughnuts while they drove the short way to the new four-story city building. Now they were in Ralph's cluttered office, where Ralph was showing off the town's vehicle tracking system.

"We had one heck of a time getting all this in place, I can tell you." Ralph pointed to the screen. "You see that car? It would have gone through several sensors if it stayed on the main highway and skirted the town—we even track cars that bypass us. For those coming in, we blocked and rerouted roads so that there aren't many ways to get in or out. Key roads have speed bumps on them—hardly noticeable at 20 miles per hour and tolerable at 30, but terrible to go through at 50. The sensors get the license plate number as well as the speed and the other data. See the tick mark there? That means the state site is searching for the number right now. No answer yet. We also have the car's weight, an image of the driver, a silhouette of the car, and the paint color. See there on the screen?"

“You mean you have software that retrieves the plate number from a digitized image?” Martin was impressed. “I figured you would just get a picture and read the number by hand. How do you do it? And what’s your error rate?”

“The error rate is less than five percent for the first scan even in rain like this. But we get later scans that reduce it below two percent. Most of the rest are covered with mud, or missing, or maybe pulling a trailer. For those we get the number by hand from the image or even by going to the car.

“This is state-of-the-art stuff,” Ralph continued. “Few local communities have it. Video cameras grab the image, and the software first assumes the plate comes from this state. If that doesn’t work, we compare the plate with stored images of plates of all other states, along with Mexico and Canada. Keeping up with new plate designs is a bother, though, and after that comes the hard part of determining the number.”

The yellow car stopped, then jumped to a new position. “What happened there?” Martin asked. “It’s hopping like a rabbit.”

“The software keeps a probability distribution for the car’s location, like quantum probabilities for the location of a particle. The screen is showing the last-known certain location given by an actual sensor reading.”

“How many sensors do you have?”

“A whole lot of them,” said Ralph. “I shouldn’t tell you just where or how many, but we use traffic lights when we can—up to four cameras perched above a light. Then we installed decoys for the boys to shoot at.”

“Decoys?”

“Yeah, that was my idea. I thought some of the locals would try to knock out our cameras. So we made a big deal about putting up these iron boxes—a target for them to shoot. The real cameras we put up quietly at night or by pretending to repair traffic signals. The locals just filled those empty boxes with lead, and we picked up most of the good old boys who were liable to try for a camera. I thought things had settled down, but there are still problems. We lost equipment on the west side just last night, and I’m afraid it’s not an

isolated incident.” He interrupted himself. “There, the ID on the car just came in.”

“Who is it? Where is the driver from?”

“That’s not on the screen,” he said. “It’s logged into the system, but it takes a court order, or at least strong probable cause, for me or a police officer to fetch the information. And I can’t prevent a log of the fetch itself. They audit once a month and they’re real fussy. Now watch—he’s stopped for gas.”

“OK,” Martin said. “But why are some cars green and some yellow?”

“The green ones are locals who volunteered to put a special transponder on their car. We’re up to seventy-eight percent now. We talked them into it using the auto theft angle.”

“Sure, you ‘talked them into it’—with a gun to their head. At the very least it sounds like manipulation without full disclosure.”

“I don’t see it that way,” said Ralph. “They know that we’ll be able to track their car, and they don’t care. There’s nothing else to disclose.”

“What about the other cars?” said Martin.

“Oh, we can track them pretty well, too. Look. The car we’ve been following has finished getting gas, and it’ll go over another weight sensor. See, now we can tell how much gas the car took on.”

Martin shifted in his chair. “That’s almost scary. What if someone wanted to come here and dump a body, or toxic waste?”

“I wouldn’t recommend it. After we found the body or the waste or whatever, a court order would let us pinpoint the car and driver right away. The software might notice the actual dumping and call our attention to it, or if they acted suspiciously, we could even flush them out as they did it.” Ralph started to get wound up. “There’s a lot more going on than you see from this display. We’re using military software that we adapted. And surplus military hardware, including special infrared and CCD scanners. The software keeps track of every car, and we almost never mistake one car for another. It’s one of those knowledge-bases, with deductions about the cargo and passengers—where they were dropped off or where picked up, based on weight. It’s got fuzzy logic built in, and special rules that fit our application.

Most of the locals don't realize the system's full extent. Outsiders never know how closely we track them."

Martin was more concerned than he was letting on. Where did freedom come into all this? "I don't like that at all. Close surveillance, and you admit people don't know all the implications. Shouldn't people be free to go where they want?"

"They *are* free to travel as they like. We're not getting anything that we couldn't have gotten the old way by following a car around. Well, maybe the weight. Mostly now we're just doing a better job—not missing a tick."

"But you know everything about each car in town? An innocent tourist comes in and you know everything about him? I don't like it. I can see you guys now: 'There, he stopped to pee beside the road, and ran over Mrs. Whats-her-name's trash can.' I don't like it."

"I don't know everything about the cars," Ralph said in defense of his system. "It's just logged into the computer. It takes a *crime* or at least good suspicion of a crime to get the data out. Since we got fully operational, we've had *no* cars stolen that weren't recovered. We used to have wild driving by young people, and they've calmed down. Much of the semi-wild driving we tolerate. Our drunk-driving problem has gone way down. We pick them up right away from the weaving, before they kill anybody. There are good people out there alive now who would be dead without this system. And we mostly don't have to deal with a big-time trial for a drunk killing someone. Instead they sober up overnight in jail or get probation for DWI.

"'Driving while intoxicated,'" Ralph explained further. "I think you call it DUI in California, 'driving under the influence.'"

Martin didn't say anything, and Ralph went on more soberly. "I know what you're thinking; I can tell by your look—that I'm not objective about the issue of drunk driving because my daughter was killed by a drunk. It may influence me. But Kelsey's seatbelt wasn't properly fastened to her car seat, so maybe we were partly at fault. I don't know. I will say this: People get much more law-and-order oriented if they suffer a personal tragedy. They worry a lot less about intrusion and loss of privacy, and think more about security."

Ralph's phone rang abruptly. The ensuing conversation was

obscure—talk of replacing, rerouting, using wireless connections. Martin looked for something to hold his attention in a large office filled with technical books, manuals, even hardware components—on bookshelves, chairs, on the floor. Martin was browsing through a book on networking when the call finally ended.

“That was Steve Ribak, my best hardware technician. He’s repairing broken lines on the town’s west side. But where were we?”

Martin tossed his book back on the floor. “Intrusion. We were talking about how intrusive your system is.”

“Intrusion means to interfere with someone, to force yourself on them. We’re not bothering them. We’re just keeping track of their *outside* movements the same way a nosy neighbor might. We’re not peeking inside their houses. We’re not listening to their conversations, not even on the phone. We’re not recording these conversations. I’ve often wondered what people are so worried about. What are they planning that might be compromised if we can later fish out where their car was? Are they having an affair? We’d just never let on where they’d been, even if we found it out, unless there was a crime at the same time. And then the affair would likely come out without our monitoring. Do these good old boys think it’s their *right* to break the law selectively?”

“Calm down,” Martin said. “As you admitted, you’d intrude if they did something you disapproved of. Anyway, I’m not the one you need to convince, but the townspeople, and I guess you did that, except maybe for your hacker who’s leaking data.”

“No, we didn’t convince everyone. There’s still a lot of hostility from a few folks—a minority, but a vocal one, and with many different views. Our opponents could never agree with one another, except for hating our efforts. All the resistance has been frustrating—there’s no appeasing these people.”

“What are they hostile about? Maybe they have a legitimate concern. Maybe you should ease up in that area.”

“Oh, different people are upset about different issues. Townspeople complained from the start about ‘loss of freedom,’ about ‘invasion of privacy.’ I expected that, and I expected potshots at our cameras. Lately, though, events have taken an ominous turn. A hard-core of

militants has been destroying equipment. We lost cameras and a relay box last night. That phone call was about repairing them. This group has gone out armed, and so far we've avoided a confrontation, even though we usually know where they are. We don't want anyone killed." Ralph paused, then went on. "On a bad day this bothers me. We're trying to eliminate crime, but in some cases our tactics seem to be *creating* crime, inspiring a few to commit crimes." Another pause. "One person has been particularly disturbing. Patrick Hoffmann—as nasty as his German-Irish name sounds. He owns a good-sized chunk of the town, and his intrigues and schemes reach everywhere."

"Could he be your hacker?" Martin asked.

"Well, probably not by himself. Hoffmann's an old man now, and wouldn't know the latest computer techniques. But he might be working with someone. That's his style—to get others to do his dirty work. He likes to talk people into filing lawsuits against his 'enemies.' I wouldn't put anything past him. I'm convinced he once had someone deliberately crash into the car of another enemy. They paid for the damage, but the enemy was so preoccupied with the wreck that he was distracted from his opposition. It was an effective strategy. There have also been rumors about Hoffmann carrying on affairs. And I have, um, personal reasons to dislike him; I'll tell you sometime. I think he's scared the surveillance could uncover his own activities.

"Ideological opposition has continued as well," Ralph continued. "Now more pointed, more refined, especially from one other thorn in our side—the 'Reverend' Bob Laherty. I call the pair of them, Laherty and Hoffmann, our 'pusillanimous preacher and publisher.' "

"What does 'pusillanimous' mean?"

"Full of pus," Ralph said with a straight face. "Don't get me going about them. You see, Hoffmann owns the town's newspaper, and he often prints a column by Laherty, who's a minister in a local fundamentalist group. In one column, Laherty started calling this place 'Walden Three,' and others picked up on it as a nickname. They even posted a 'Walden Three' sign outside town, along with a backwards swastika. Ignorant scum—they don't even know how to draw a proper swastika. Myself, I take the name as a compliment."

“I don’t understand. ‘Walden’—that was Thoreau’s pond?”

“Yeah,” said Ralph. “And his book. But later a psychologist named Skinner wrote a book called *Walden Two*. ”

“I sort of remember that, but I don’t think I ever read it.”

“Well, it’s about one of these utopian societies. I did read it after the fuss, and I see similarities. Skinner wanted to control people’s behavior—to make crime impossible that way, I guess. In Skinner’s little Walden Two community, everyone was happy because they were conditioned to be that way. He had some weird ideas, but I thought the book made a fair amount of sense, though I didn’t think all the ideas would work. Much of what we tried didn’t work the first time either, or didn’t work at all. Since then I’ve read other Skinner books. There was even an article about Walden-type communities, where they tried to put these ideas into practice.”

“And why did they draw a swastika?” Martin asked.

“They’re claiming the town’s now a Nazi concentration camp. What rot.” Ralph started to dig beside his desk. “I’ve got a copy of Skinner’s *Walden Two* book here somewhere, or if not here, at home. Want to borrow it?”

“Sure, I’ll look at it tonight.”

3. Identify People

Tuesday noon, March 24

The next day, Ralph Barnes and Martin Davis were finishing lunch at a downtown “homestyle” restaurant. They sat at a quiet table toward the rear of a long, narrow dining area with a tiny kitchen at the back. Martin had eaten chicken fried steak.

“It tastes OK, but they shouldn’t call it ‘chicken,’ ” he said.

Ralph looked up with astonishment. “It’s *prepared* like fried chicken. Have you been living off-planet?”

Ralph, never one to pass up food, ordered a piece of apple pie for dessert. Martin watched in fascination as the waitress measured and then carefully cut a fresh pie into seven equal pieces.

“Did you see that?” Martin said. “Seven pieces, all the same. That’s hard to do.”

“Sure. Clair always cuts sevens.”

“Why? Is that a Walden Three specialty? Evidence of a superior civilization?”

“Hardly,” said Ralph. “I asked her once. They look the size of a sixth of a pie, but she can sell one more piece.”

“Ah-ha. A crime,” said Martin. “Cheating customers who think they’re getting a sixth. Just wait—you’ll all get your just deserts.”

Ralph winced, but before he could answer, a woman and teenage boy walked to their table. Ralph stood up for them abruptly, with Martin belatedly rising also. Ralph seemed awkward, almost embarrassed, in introducing her as “my friend, Susan Pierce, and her son, Kevin.” Ralph continued with an introduction of his “former student, Martin Davis, from San Francisco.”

Ralph convinced Susan and her son to sit down even though he and Martin were clearly almost finished with lunch. Susan was short,

with brownish-red hair and a pale complexion. Martin wondered if Ralph had anything going with her. Martin didn't think her very attractive, and she seemed old for Ralph—then he felt the opinion was unworthy of him—it was Ralph's business, after all.

The boy was thin and small, perhaps fourteen or fifteen. His jeans and tee shirt were topped off with glasses and curly black hair, a narrow, prominent nose, the face drawn and serious—Martin thought it looked like a suffering poet's face.

When Susan asked what he did in San Francisco, Martin replied that he went for long walks along the beach, attended plays, and then more responsively said that he worked with computers. "Consulting work with various companies—network and access problems, security problems."

Martin tried to engage the boy Kevin in conversation, with limited success, and Ralph had to take up Kevin's cause himself: "Kevin's good at everything academic—a good writer and a clever computer user. Tell Martin about your work with the library's web page."

Kevin reluctantly described how he had created a library homepage. Martin understood his reticence; the server was already there—it was just a bit of simple HTML programming, though he had managed to put a hook into the card catalog.

Ralph had long since finished his pie, and he decided they should leave the newcomers to their lunch. There were still subtle tensions as the two of them left after saying good by.

It was just a short way to Ralph's office, diagonally across the street to City Hall. As they walked, Ralph evidently felt an explanation was needed. He told Martin that Susan Pierce was a single parent, divorced long ago, and that he had been seeing her "off and on." Kevin lived with his mother, though he spent some holidays and a month or so during the summer with his father in Seattle. "Susan's had a rough time," Ralph said. "When I got here, she was finishing a nursing degree part-time and was working at Patrick Hoffmann's car dealership. You know, the guy I talked about, the sty in my eye. He subjected her to the most amazing abuse—emotional and physical—even following her around at night, lurking outside her apartment, phoning late to see where she was. I was worried for my own safety,

as well as her's."

Martin wondered about the topics Ralph had left untouched. Kevin seemed either shy or resentful, maybe both, trying to get along with Ralph, his mother's friend—and Ralph could be so dogmatic and authoritarian—not easy to deal with in the role of unofficial stepfather. Also, Ralph's story about Hoffmann was so incomplete. Had there been a simple rivalry of two men for the same woman? Or something deeper? The questions would have to wait for now.

At his office, Ralph threw himself down in the chair. "I'm really tired. I let you sleep last night, but I had to get up to restore the system. Took two hours. Those deputies don't know how to be ordinary law officers any more. They go crazy without their computers. Luckily we don't have a crash very often, and I can repair and reboot from home. I'm real proud of setting it up so I don't have to physically go to the computer to restart."

"What about the town's data logging—all your surveillance data—during the down time?" Martin asked.

"Those computers didn't go down. But if one had and the data logs were missing, the software would synchronize with reality quickly—in hours or days everything would be located again."

Martin was sitting beside a window on the second floor of City Hall. Cars went back and forth below, evidently followed by software, carefully identified and kept track of. He didn't like the idea of so much surveillance, but it wasn't worth an argument with Ralph. "And who pays for all this?" He'd wanted to ask that from the start.

"It's not as expensive as you might think. We've used second-hand equipment—some of it military surplus—and a lot of free software, not to mention volunteers who help. The town is financially healthy, and finally, we *are* on a tight budget."

Ralph cleared his throat. "Martin, I want to log you into the system so the town knows who you are. We don't usually do this with tourists, but you'll be in out-of-the-way places with me, and it'll be easier with your ID on file."

"You want my fingerprints?" Martin moved to a seat opposite the desk. "I've been fingerprinted by the feds, of course—you knew I did classified work—but never by a civilian agency."

“Nah,” said Ralph. “We don’t use fingerprints here in the city. If someone leaves a fingerprint at a crime scene, or if there’s a booking, we send the print out for state and federal searches, but otherwise no prints.”

“Now that I think about it, I’ve never heard of a city with its own ID system. What do you use? And how do you get away with it?”

“The climate’s gotten easier with tort reform, and we get by because our system is non-intrusive, non-invasive. For individuals we use primarily voice, and then also profile, weight, and a picture of the face. We can get these without asking.”

“But you just asked *me*.”

“For your *permission*. We already have the data. We’ve gotten it many times while you wandered around.”

“I actually didn’t know that.” Martin suddenly felt nettled. They weren’t just following the cars. The software knew who he was, knew where he was, all the time. Was there a camera pointed at him right now? He had a flash of self-consciousness. Were they filming him in the toilet? Did they have footage showing him scratching his rear end?

Ralph could see from Martin’s expression that he didn’t like this new disclosure. “Don’t get upset. We could get so much more, all kinds of biometric data—iris patterns or fingerprints—but we don’t. And the system has you logged as an unknown, with a tentative ID, of course your real name, since you were matched to the car. But all that is inaccessible without a court order. With your permission, we can make your name available locally and openly to the computers.”

“Do you really think that the ability to collect even more data justifies what your town is already gathering? But OK, I’ll go along. What do I do?”

“Just sign on the screen here,” Ralph said, after typing a few commands. “See, we still use ordinary signatures for legal matters. What we really need is a national ID card, but I don’t expect that anytime soon.”

“An old debate,” Martin said. “But I’d just as soon leave it alone for now....”

Ralph ignored the attempt to drop this subject. “I don’t under-

stand all these people opposed to effective, coordinated national identification.”

“Come on, you understand a little.” Martin couldn’t help getting drawn in. “They’re scared. Scared of losing autonomy, of being controlled. They’re worried about a future when they have to show the card to take a walk in the woods.”

“Is that better than what we have now—worrying about getting killed by an anonymous thug during their walk in the woods?”

“Nice rhetoric, Ralph, but it doesn’t alter the fear of control.”

“I think it does, to the ordinary citizen. We’ll be controlling the people they fear, not them.”

“We’re caught in a loop, you and I.”

“Then here’s a new thought.” Ralph stood and started pacing. “I think the strongest opponents of ID cards have done things now and then on the sly. Activities they call *technically* illegal—that others would call just illegal. They want to preserve that ‘right.’ Most of these people have a valid driver’s license, have never had any fake ID, wouldn’t know how to get a fake driver’s license if they needed one. It’s crazy. They want to preserve weak, insecure ID cards, when such cards will never do them any good and might do them harm, say if someone with a fake ID assaults them, or if someone impersonates them.”

“You’re still repeating yourself. It all *starts* with perfect ID cards and goes on from there. Until we have no freedom left.”

“There’s our difference. I don’t want people going wherever they like anonymously. I can do without that ‘freedom.’ I’ll have other freedoms to replace it.”

Ralph paused in his pacing, glared at Martin. “Someday you may be accused of a crime,” Ralph went on, “one you didn’t commit—a crime committed by someone impersonating you. It happens all the time. They’ll use your name to steal, perhaps even steal your own money and property. Then you’d need national identification badly—you’d be grateful for it.”

Martin broke the loop by letting Ralph have the last word this time, but he didn’t agree.

4. Track Data

Wednesday afternoon, March 25

That next afternoon Ralph Barnes was at his office, sitting in a well broken in, overstuffed chair, while his visitor Martin Davis typed at a keyboard. Ralph had tried to straighten up the mess of books and computer parts in the office, but with limited success. Martin's software was searching through processes running on the town's computer system. Unusual activity. He pulled up the executable, copied it and disassembled it. "You see this?" he asked, triumphantly pointing to the screen.

"What about it?" Ralph said.

"This is your intruder. I'm sure. It's one of his agents. He's maybe not very good, because he just adapted a standard worm program. See this section? The program clones itself every five minutes and the son process kills the parent. An everyday hacker approach, I used to do it all the time."

Ralph ground his teeth. "Kill the worm. Chop it into segments. Feed it to birds."

"No, I don't want to kill it. Our quarry might suspect he was spotted. I'll leave it and hope he mucks around. Don't you have any intrusion detection software running?"

"No," said Ralph. "That's an area I always meant to get to. We haven't had problems with network attacks, and I was hoping for the best."

"Well, you've got a problem now. Your system's practically wide open—what they call 'the embodiment of the freedom of information act.' Later we need to talk about security measures you should take, extensive ones, but for now I think I'll leave your system alone and

let my little PC here snoop on the network without responding to anything. It'll just listen and record."

"You'll connect it where?" Ralph said.

"Right here in your office, I think. How good is the *physical* security of this office? Remember, we're assuming an insider. Maybe he works for you. Maybe he has keys."

"Of course I remember," Ralph said. He paused. "Can we mount a video camera around here somewhere? I've never done it in the offices before. If it's one of my programmers, perhaps he won't expect it."

Martin examined the sparsely-furnished office with its tall ceiling. "Only if this were a movie or a spy novel. You've no place for a camera. Just re-key your lock."

Martin then peered back at the screen. A second worm. "I also checked your hacker's yellow flyers that blanketed the town. It's all health information that came from a specific database. We should concentrate on the users of that database. What about usage logs? And other logs?"

"Yeah, we keep a log file of all users of that database. With the username and the access times."

Martin was disappointed. "But not a log of the specific data items accessed?"

"The database has that information, but we don't save it."

Martin finished typing and turned to Ralph. "It's too bad we can't fingerprint the health data. I could put nasty little fingerprints on each version a user gets."

"And get the data dirty?" said Ralph.

"Come on, you know what I mean: *data* fingerprints. Tiny alterations to the content. If he tried to use this information, we'd pinpoint him right away."

"Sounds great," said Ralph. "Let's do it."

Martin stared out the window at cars and people below. "We could in principle. In practice it's another story. Your health database is one of the standard versions my company's worked on. We extended it to provide fingerprints on the data—our value added. But it would take weeks to install. And cooperation from the various em-

ployees. And official permission. A big project, expensive for your town, unless I did it all for free. Even free it's a big project."

"What else can we do—in a shorter time-frame?"

"The database itself keeps a log of all accesses to data items. I'm sure I can get it to copy this log file so it will be around later. Then with the next leak we can sift through all that data, looking for everyone who accessed the specific leaked items. It will be a lot of data, but I'll throw together a few filters. It's not definitive like a fingerprint would be, but it may narrow the field. Also this hacker may access his worm in the next week or so. If he does, I should get a report of that."

"I hope it works, but I don't expect it to. Sounds too easy. Are you going to finish up soon, though? I have to stop by my house, and then there's a party this evening at the Mayor's place. Lots of movers and shakers will be there. And I already told them I was bringing a guest. I should have told you earlier."

"Do I have to dress up?"

"Nah. It's informal." Ralph pointed to his shirt. "I'm wearing what I have on, not even a tie."

"What happens to this guy if we catch him?"

"You always were a softie," said Ralph. "We'll fire him, if he works for us, but nothing else, I swear. It would be hard anyway to get a conviction for what he's been doing. We might even have trouble firing him. Now let's get going—first home, a snack, and then the party."



Ralph parked on the street nearly a block from a large, brightly-lit house. There were cars everywhere. Somewhere would be a screen with green and yellow cars; their's would be green. A huge oak tree dominated the front yard of the mayor's mansion. As one of the perks of the job, the mayor got the use of this official residence—a white Greek revival with four tall columns forming a front porch.

They were late, the party well under way, as Ralph pushed in, with Martin in tow. People were spread throughout the downstairs, even spilling into the kitchen.

“Jeez, everyone has on a suit coat,” Martin muttered.

“Relax. *I* don’t have one; you’re not alone.” Ralph greeted people left and right, grabbed food. A short, odd-looking, older man pointedly addressed Ralph as “Doctor” Barnes. Ralph just as noticeably said “Mister” Hoffmann, and Martin recalled the name—so this was Patrick Hoffmann, the person Ralph disliked so much, perhaps a rival for Ralph’s friend, Susan Pierce. Hoffmann didn’t look formidable, a small, well-dressed man with wiry gray and black hair, a sharp nose, and glasses; Martin thought he looked a bit like Kevin. If Martin hadn’t known better, he might not have noticed the undercurrent of tension and hostility in the words Ralph exchanged with Hoffmann. It was also awkward that Ralph didn’t introduce them, and Martin was glad when they moved on.

After several quickly-forgotten introductions, they faced a older heavy-set man in a clerical collar. He was bald, with a thick dark beard.

“Martin, I’d like you to meet Father Joseph Phillips. He’s Rector at Grace Episcopal Church. Joseph, this is my good friend and former student, Martin Davis, visiting from California to help me with software problems.”

“Pleased to meet you, Martin,” he said, using the firm handshake that all ministers have. Ralph drifted away as Joseph struck up a conversation. They wandered through several topics, until Martin said:

“Ralph told me the nickname of this town was ‘Walden Three.’ Have you heard that?”

“Yes, a name bequeathed by my friend Robert Laherty,” Joseph answered. “You’d have trouble finding anyone here who hadn’t heard the name.”

“So what do you think of B.F. Skinner?”

Father Joseph smiled. “A trick question. What answer do you expect?”

“I don’t know. But I asked you first.”

“Oh, I know what you expect,” said Joseph. “Skinner the famous materialist, the atheist, and I the priest. You expect me to say Skinner was the tool of Satan—the world would have been better off without him. Something like that?”

“Ahh ... yes.”

“Or how about a silly answer? ‘He’s part of God’s Great Plan,’ in capitals, ‘even as a poor misguided unhappy man.’ Well claptrap. Skinner was an important thinker, with fabulous originality. He introduced precision and science into psychology. He taught us to think before we use words like ‘freedom,’ or ‘justice,’ or ‘dignity.’ Do we know what they mean? Do they mean anything?”

“I seem to have pushed a button. You like him then.”

An older woman came through with drinks, and Joseph scooped one off the tray. “Skinner talked about Jesus in his ‘Walden Two’ book. Did you know?”

“Ralph lent me a copy, and I’m supposed to be reading it. I guess I haven’t gotten that far.” Martin sipped guiltily from his glass.

“Skinner dwelt on the ‘Love your enemies’ message. He truly was a materialist, of course, but even from his point of view he had only admiration for Jesus.”

“As a moral thinker? A teacher?”

“Not at all. As someone presenting remarkably effective techniques of self-control. Mind you, I’m just relating Skinner’s view here, and though I share it, I put it into a larger framework. Anyway, Skinner said that oppressed people like Jesus and his followers might let the oppression lead them to rage, and the rage would make them suffer. By displaying the opposite emotion, love, to their enemies, they comfort themselves, they rid themselves of their suffering.” He held up his hand as Martin started to respond. “But there’s more. According to Skinner, Jesus discovered that love of his enemies gave him power over them, eventually to control them. I wouldn’t myself use a word like ‘discover,’ but that’s Skinner’s way.”

A young woman joined them quietly. Martin tried to look at her without obviously staring. She had dark hair and clean features, an easy smile.

“I must admit I’m pretty much a materialist myself,” he said, keeping an eye on any reaction she might have.

“That’s one of Skinner’s contributions—providing a link between materialism and religion. I talk to young people like you all the time. Even you must admit that there truly was a *historical* person Jesus of

Nazareth, who lived and taught and was crucified.”

“That much of course.”

Martin found the conversation interesting enough, but Joseph was lapsing into a sermon. “This historical person, Jesus, introduced a remarkable new way of thinking, a ‘paradigm shift’ we call it now: ‘Love your enemies’—the most important shift in human history. Were you brought up as a Christian, Martin?”

“Yes,” he said uneasily.

“There you have it. Your whole outlook, your fundamental assumptions, all are shaped by this paradigm, ‘Love your enemies.’ Renounce your religion if you will, the paradigm remains. Other cultures are bewildered by it. They say, ‘If we are to love our enemies, what will we do for our friends?’ They don’t understand it, but Skinner helped us see it in a new light.” He paused, as if he thought he was talking too much. “You see, it’s a paradox. He who loves his enemies has no enemies.”

Martin felt strangely moved. “That’s odd. Ralph was telling me something similar—he wants to make it impossible for anyone to commit a crime—his Walden Three. Now you’re saying Jesus made it impossible for anyone to be his enemy. Isn’t that interesting?”

Joseph wasn’t impressed. “I know about Ralph’s plans, and I approve. We’ve often talked about them. But that’s a short-term, stop-gap approach, based on technological gadgetry. The real solution’s elsewhere. Based on faith and morals, on family and community, and especially on love.”

He looked a little sheepish that he’d run on so. The young woman slipped into the pause.

“Ah, father, you always have the same message.”

“But it’s nice to have a new audience. Martin, meet Becky,” he said as introduction. “Please excuse me, they just set out little desserts.” He handed Martin a card. “If you’re in town on Sunday, this shows the times of our services. You’d be very welcome.”

Martin stood alone with Becky, a conversation island in a swaying sea of people. Her hair was dark, and a rounded face framed beautiful dark eyes. She was of medium height and thin, conservatively dressed in a black turtleneck sweater and simple skirt. A plain

silver cross hung on a chain around her neck. He'd taken her at first for a teen-ager but decided she was much older; there were lines of experience around her eyes, a scar on her chin. He tried a random stab at conversation. "Where do you know Father Joseph from?"

"He's my father," she said with a smile. Then when he looked confused, "My *biological* father."

"Ah, I was thinking of a Catholic priest. I guess Episcopal priests can marry."

"I hope so," she said.

This was not going well. "What's it like, being the daughter of a priest?"

"The standard question."

"OK. How often do people ask what it's like being the daughter of a priest?"

"Too often."

He was getting desperate. "Has anybody ever asked how often people ask about being a priest's daughter?"

She blinked. "Maybe. I'm not sure."

"I've got you now." Martin took a deep breath. "Has anybody before *asked* if anybody asked how often people ask you if you like being a priest's daughter?"

She forced the smile of someone used to dealing with computer crazies. Martin felt like a comedian whose act had just died.

5. Track People

Thursday afternoon, March 26

On the day after the party, a warm and sunny afternoon, Ralph was forcing Martin to stare at a computer screen in his office, despite the nice weather outside. They watched a simple screen world that mirrored part of the true world of places and events.

“Now look at this display,” Ralph said. “What do you think it’s showing?”

Martin studied it carefully, scrolling around a map of the town overlaid with green and yellow tick marks. “My God, these must be people—each spot is an individual! How do you do that?”

Ralph gestured toward the watch on his wrist. “Each of the green spots is wearing one of these, a personal monitor.”

“That’s it! That’s really going too far,” Martin said. He was himself surprised at the strength of his outrage—everyone in the town linked to the computers like robots! Martin thought of bad science fiction movies, as when the hero discovers he’s the only human being left on an earth full of aliens. Had everyone in the town taken leave of their good sense?

“You have each of these people wired up?” he continued. “Monitored? That’s disgraceful, demeaning. How can you possibly justify this?”

“Are you going to listen to an explanation, or just keep babbling?”

Never, never would he wear such a device, Martin said to himself. Aloud he said, “OK, I’m listening, but I can’t imagine a satisfactory explanation.”

“First off,” Ralph said, “these watches are *not* recording or relaying what the person is saying or doing. They’re just responding with location and heart rate. The use of these little gadgets is strictly

voluntary—we're only up to 63 percent right now. They serve many useful purposes."

"Yeah, I'm sure. Many useful purposes."

"Will you just hear me out? I can even show you the fancy explanation we sent out when we introduced the watches. 'Propaganda' you would call it. But let me summarize. The watch keeps track of where its owner is and that he or she is in reasonable health. For example, if they have a major heart attack or cardiac arrest, the watch will signal that, and we can dispatch EMS. We may already have saved several lives that way. The watches have two 'panic' buttons on them—one a personal health or injury notification, requesting emergency EMS, and the other a crime or danger notice, asking for immediate help from the police. The buttons are hard to push by accident, though I admit we've had a number of false alarms and a few cases of people pushing the wrong button. Of course we don't get a true false alarm, since each watch identifies the user."

"You're not making this sound good—just tidy and efficient, smooth running," said Martin. "It sounds like a terrible threat to privacy and personal freedom."

"We *are* keeping track of their location. But an individual can push a third 'abort' button at any time to turn off the watch's monitoring functions. It's all voluntary. As for 'freedom,' the citizens who choose to use this watch and even the others who live here and don't use the watches, are mostly free from crime, free from anxiety about crime, free from worry about an unreported accident or illness. They have many 'personal freedoms' that you're not counting."

"I don't care. You'll never convince me this is anything but a terrible idea. You can use sugar-coated logic to make it sound nice, but it still stinks. One day it won't be voluntary anymore, and your prized abort button will stop working."

"The watches come in different sizes and styles," said Ralph. "Men's and women's, and different colors, different bands."

"You're making me sick. I mean physically ill."

"Come on, it's just not that bad." Ralph was wringing his hands, the way he did when he got worked up. "I know you have this picture of me following people around though the monitor, keeping track of

an affair they're having, and later blackmailing them. First of all, remember that the *system* knows who these people are and where they are, but *I* don't know that, and can't find out without good cause, like suspicion of a crime, or a button pushed. And even then there's a log of any information I might obtain—the log's reviewed monthly to see if the law officer's actions were justified. If *I* were having an affair, I'd leave the watch on—it'd be much safer. If I wanted to kill, I guess I'd take the watch off. I suppose I should tell you the rest, though I know you're not going to like this: Even without the watch, our software keeps track of most individuals in real-time."

"Yes, I concluded that. The yellow dots on the screen. And did you explain that to the good citizens of Walden Three?"

"Perhaps not completely, but it was implicit. Maybe we should have explained it better. Some of the good old boys and kids don't realize that we often know where they are. Most of the others, and all the town leaders understand the implications of what we're doing. And approve of it. It's taken two years to get the majority used to this, but now most are convinced, all except the several groups I've mentioned, the different hostile citizens. And we can't track everyone—the yellow dots are either educated guesses, or they are the last-known certain location, whatever display option you choose."

"You said people have gotten 'used' to your surveillance. Humans can get used to almost anything—no matter how horrible. Stick in another phrase for 'surveillance,' like maybe 'neutering the mentally defective' and you'll see where you can get. Even the Holocaust didn't happen overnight; people got 'used' to it, with gradually deadening nerves. I don't like the way your citizens are 'sold' on your controlling mechanisms; you always present them as a snow job or maybe a marketing scheme, but not a revelation of the whole truth. Where's your open access to information?"

"Give me a break," said Ralph. "Nothing is hidden here; the townspeople have had full disclosure. Some don't care about the implications or can't understand them, that's all. And yes, we've been selling the citizens on these mechanisms, convincing them that it's in their interest to go this way. That's how a free society is supposed to work. Those with strong new ideas try to persuade the others."

Ralph grumbled a little more, growling like an old grizzly bear, and then turned to show Martin additional display features, zooming in on the west side. He continued in a more subdued tone: “We also use infrared detectors and CCD scanners at night, along with dish phones. We’re lucky how Rockcliff is laid out, with natural barriers on two sides. See here on the screen—there are just a few ways to get into or out of town along this whole western boundary—we did a little digging to make it harder. You should picture a room holding hundreds of screens showing night views around the city. What we have is much better—infrared scanners with automated scene analysis and special attention to movement. The important parts are not the surveillance cameras, but the *agents* analyzing the images in real-time. It’s like the early days of the personal computer revolution, when people thought a PC in everyone’s hands would make the difference. But only the *connection*, the network of all these PCs really mattered. Now it’s not just the network, but the agents at network nodes.”

Once again Martin was upset. “You have autonomous agents, pieces of software, outside the control of human beings. Do you know for sure what these agents will do? Just as in all the old myths, such creatures will turn on their masters.”

“You keep trying to pick a fight,” Ralph complained. “The agents are just logging data—sometimes calling it to the attention of law enforcement, for possible action. And our software agents that do the scene analysis never sleep or get tired; they do a great job identifying what’s in their view, especially people—the specific individual—and cars and animals and UFOs.”

“You’ve got UFOs, too?”

“Just kidding. We do regularly get unidentified objects—not flying ones, though. I’ll also admit to *you* that for the watches, the heart rate monitor has been erratic—we’ve had to lower the threshold, to zero for some, because of lost beats.” He held up his watch. “The Singapore firm that made these babies oversold them. They’ve been disappointing. They work fine in a lab with just the right tension in the band, but reception’s intermittent at best in the field, and we had to loosen some bands to promote user acceptance. The bottom line is,

we get a steady beat from about half the wearers. Of course the system factors this information into its decisions—any truly anomalous responses still get flagged.”

“What about batteries?” said Martin.

“A big problem. Actually, these watches don’t continuously broadcast, but instead respond to transmitted pages. Arrival times of the response at different places give us a location estimate. The intermittent broadcasting saves enormously on the batteries.”

Martin was idly scrolling through the display, when something caught his eye. “What the ... ? *Red* tick marks?”

“Well, what do you think they are?” Ralph asked.

“Um. Maybe important people? The mayor and other big shots.”

“No,” Ralph said with a short, nervous laugh, “not even close. These are folks on probation—some of them for a serious offense. *They* have no choice. They must wear a leg monitor. And we make sure to get a heart beat from it.”

“Can you force them to wear a monitor?”

“I know you’ll dislike this answer, but yes. Usually it’s a condition of probation. They do have a choice: jail or the monitor.”

“How horrible. I’d prefer jail to constant monitoring.”

“Well, you’re wrong. You’ve never been in jail. The convicted carry out a normal life with the monitor, and save the town a huge sum compared with jail. Actually, we have several kinds of monitors, from ones that are beefed up versions of the wrist band, and ones that provide audio links, to waist bands that will deliver a disabling shock.”

“Oh, God, this just goes on and on: ‘A disabling shock.’ ”

“We have none of the shockers in use right now. And I don’t understand your complaint. It’s better than shackling a person up, like a turkey ready for roasting. In fact, that’s been an issue at trials: no matter how dangerous they might be, our defendants don’t have to prejudice a jury with restraints that show.”

“These shockers are easily the grossest device you’ve mentioned yet. Don’t you think they could be misused? Set off by accident? Do you have medical studies to show the effects on ‘victims’?”

“Well, Martin, I don’t want to defend them; I’d use them spar-

ingly, for sure.” Then as an afterthought: “If at all. As I said, we’re not using any now.”

There was an awkward pause. Then Martin said, “One more question. On the display with the cars—I saw it yesterday morning. Are there red cars too?”

“Yeah, good guess. I didn’t write this software, but it’s well-designed, especially the visual interface. Green for monitored, yellow for neutral, red for trouble. We can tag a car red with the software, say, if we are suspicious. The program automatically tags others red, for example if there’s data returned by the state or federal searches. We can also slap a special monitor on a car, by court order, and those show up red too.

“Oh, and I must not forget, we put special hardware on the cars of ‘driving while intoxicated’ offenders. We get elaborate and accurate data about their car. We can also disable the car remotely if we need to—turn off its electrical system.”

Martin had been looking at the display again. His attention snapped back to Ralph. “What? Remotely turn off the car? Like at the top of a hill? That would solve your problem with them.”

“Martin, these are convicted, DWI offenders. Just by luck they didn’t kill anyone when they were drunk and driving. Whose side are you on here? Would you rather see one of these drunks race all over town with no controls? As for your hill, the brakes would still work—just have to push harder. In fact, after nine months of use, I don’t think we’ve once used this feature.

“There’s also a keyboard activation unit,” Ralph went on, while Martin rolled his eyes. “They have trouble satisfying it when they’re drunk. In fact, there’ve been proposals for tests in the workplace to check for impairment. We don’t use them here, though.”



Another day had passed, and Martin decided to stay home Friday while Ralph worked at City Hall. Martin had neglected his consulting and e-mail for nearly a week and needed to catch up. The security report to the Penza Group would take hours to finish, and a furniture

company still had computerized voicemail problems. Ralph used one of the new ISDN phone lines, and he had all the latest equipment. For Martin it was like time spent on an uninhabited Pacific island—well, one with a data link, but no noise or distractions, no annoying phone calls or door-to-door sales people, just Ralph’s pushy grey cat and five goldfish. After awhile the silence itself was distracting. And stranded on an island, he probably would have had more food—two rooms full of computer equipment, but an empty refrigerator. How did Ralph survive with no food? He finally found junkfood snacks.

He and Ralph hadn’t discussed the evening, but Ralph generally got home at five-thirty. Six o’clock came and then seven, with no Ralph. By eight o’clock, Martin felt like a stranded housewife, but he was a bit concerned. Probably something just came up, an unexpected problem. But wouldn’t Ralph call if that were the case? Martin had long since logged off the computer to make sure both phone lines were free, but now he stopped work entirely and paced the house, not wanting to call Ralph at work, but irritated that the evening was wasted.

At nearly nine, Ralph came in and collapsed in a chair. “Sorry I’m so late,” he said.

“That’s all right.” Martin had resolved not to start complaining.

Ralph heaved a sigh, then said, “No, no, it isn’t all right. Big trouble at work, and I owe you an explanation—can’t tell you, though.”

Not sounding sincere, Martin muttered that no explanation was needed.

“Oh, rats, Martin. You must not hint about this to anybody, but I’ll feel better telling you. Those damn police! Chief Rollins even approved it. What idiocy—and a waste of money, when we don’t have that much money.”

“Slow down,” Martin said. “Start at the beginning.”

“OK.” Ralph took a deep breath. “I need a drink.” He poured himself half a glass of cognac, while Martin declined a drink. Ralph sipped carefully. “The police bought a new toy, an expensive toy, without consulting me. A surveillance blimp. I’d never heard of such a thing, and no wonder—the world’s stupidest platform for a video camera. A ten-foot blimp, with little electric propellers to move it

around, and several infrared-sensitive video cameras and CCD sensors. There's a directional microphone on it too, one of those sound cannons."

"That might not be very effective," Martin ventured.

"Not effective!" Martin had never heard Ralph like this. "They gave me a demonstration. Painted it black—might as well have made it florescent—a huge black floating hippopotamus, it stands out like the full moon. Did they think no one would notice? They've deployed it several times, and so far they've been lucky. They can only send it up when there's almost no wind; a top speed of ten miles per hour, so what did they think it would do in a twelve-mile wind? You could shoot it down with a BB gun or a slingshot; you need an unobstructed view from above. Unless it's very high, it sounds like a washing machine in the same room with you. And be careful of power lines; watch out for airplanes. Oh, Lord, how stupid." He stared at his glass, drank more cognac.

Martin tried to calm him. "A silly toy all right. They can paint it red, white and blue, fly it around on Independence Day. Money spent to no purpose, maybe, and a toy *I* would dislike, but I'm surprised *you* 're so upset."

"You don't understand this small-town culture. Try to picture it. The people see a black blimp videotaping them? They'll go berserk. And not just the few paranoids. Half the town would flip out. We'd be on the national news." Another sip of cognac. "I found out about it today from the budget printout. At least Rollins didn't directly lie to me.

"Especially now," Ralph continued, "anything we buy like this, anything we deploy, we have to publicize it—everything out in the open. If a blimp had any real utility, we might put it over by letting everybody know, stressing some idiotic use—find Jimmy Hoffa's body, say. Even if it weren't a disaster, we still wouldn't need it. The fixed surveillance cameras we have are fine. And the fixed microphones. If we ever want an aerial platform, I'd go with one of the tiny stealth helicopters, but again, we'd have to promote it."

Ralph started pacing again. "The worst of it is, they bought the blimp through Patrick Hoffmann—you know, the newspaper owner

we met at the Mayor's party. Whenever I find something strange going on, he's always behind it."

"I thought you said he was against surveillance, against all your ideas for the town."

"He is, but he often plays a subtle game of intrigue. I think he wanted the blimp used so that we would all be discredited."

"So what's to happen?" Martin asked. "Do they keep using the blimp?"

"I won that battle, but I don't like the implications. I can't threaten to resign every time something like this comes along. I told Rollins that. I'm part of the team; I have to take part in the decisions."

"You trusted the police before?" Martin asked.

"No, dammit, of course not. We need surveillance of the police, too. People must know what the police are doing. Shine the light of public scrutiny on all these activities, keep track of government agencies and their actions.

"I've also changed my ideas about cameras in public. We should spread the word about where they are, and make all the images available publicly. After all, each image just shows what citizens could see for themselves by walking to the camera location. Our citizens could help keep areas secure by watching."

"You'd make all the surveillance images available on-line, to anybody?"

"Yeah," said Ralph. "It makes sense to me right now. But I should consider the idea again when I'm not so tired."

Martin wouldn't let up. "What if an individual misused the video images, say, for blackmail?"

"Remember what I said. These cameras are in *public* locations. You can always go to the camera and watch what it records. Or take your own camera."

"What if a company misused your images? A private firm could try to keep track of everyone just as your town does."

"We wouldn't give them unlimited access to the camera images. And they're missing much of the data the town's computers have, anyway. But like I said—I'll have to think this over carefully."

6. Private Lives

Sunday morning, March 29

Saturday had been a beautiful day, but Sunday was cold and gray again. After sleeping late, Martin confronted Ralph, following him to the small back bathroom where Ralph started to lather his face.

“The girl I met at the mayor’s party, your friend Becky, Becky Phillips, well, I talked with her on the phone yesterday,” Martin said. “She said she wouldn’t have been at the party, that she doesn’t usually go to those affairs, except that you’d made a special point to ask her father to bring her.”

Ralph grunted and kept shaving. “Ouch,” he said. “I need a new blade.”

“You remember that personality profile you had me fill out? ‘Just for fun,’ you said.”

Ralph grunted again.

“You used that to computer match me with her. You fed in the data, her name popped out, and you asked her to the party.”

Ralph finished up, rinsed and wiped his face. “You’ve got it mostly wrong. You see, I knew her before I knew her father, Joseph, before I came to this town. In fact, she’s the reason I’m here at all.”

“Then why’d you invite her?” Martin was still nursing a grudge. “You shouldn’t match people up without asking if they want it.”

“I’ll admit I thought you two might like talking to one another. But I didn’t try to line you up. I didn’t drag her over to you.”

Martin glared at him, and he stared back with open-faced innocence. “I’m still suspicious,” said Martin. “OK, then, how did she bring you to this town?”

“It’s another one of those long stories. I met her at school, after you left; she was the student of a colleague. I was still teaching

computer science. She came back here partly because of her parents and partly for health reasons—she’s a diabetic, with a serious form of the disease. She started consulting for the schools—introducing computers, adding tricks. She has a weird background that includes experimental psychology. And she was always interested in improving education—it was the Dark Ages around here with the schools. Anyway, she wanted to do a better job with school records, like test scores—make them centralized, not to mention records of vaccinations and such.”

“So she hired you.”

“Darn near. They wanted to hire someone to straighten out their computer system, which believe me was a big mess. She tossed my name around and here I am. In fact the hardest step was convincing me to interview at all. This was a year after you’d finished your degree. I was getting tired of teaching, tired of the politics in academia. And my personal life had gone down the toilet. Now for me this has become an experiment in social engineering—to see if I can make a small town work better.”

Martin wasn’t in a good mood. “I know how to make the town work better, to make crime impossible. Just take away all privacy. Everybody wired up all the time—not even Orwell’s ‘thought crimes.’ Think about it, no family violence, no child or wife abuse. There’d be no guns, not even sharp knives. You can tattoo a bar-code onto everyone’s arm—no, their forehead, for easier scanning. Eventually embed control circuitry under the skin, maybe in the chest cavity.”

“You’re just baiting me, but I’ll take your statements seriously anyway. Removing all privacy would be a bigger crime, a crime committed by our town, by society. Of course I have other goals besides just making everyday crimes impossible.”

“So what’s the big deal about privacy?” Martin said. “Why is privacy important? Why not just give it up?”

“You don’t believe this. You want to know how I’ll react. I don’t know—why is privacy important? Um. I like my privacy. All alone, if I want to march around my bedroom singing skinhead hate songs, I think I should be able to.”

“A weak justification there. What if someone overheard you and

misunderstood? Shouldn't society protect you from making yourself unhappy with your songs?"

"I don't propose to protect people from themselves, though I do want to help them conquer any personal demons."

"A daemon is just an autonomous agent," Martin muttered.

"You're really grumpy today. I didn't mean that kind of demon, of course. But I'm fuzzy-brained—I need coffee. Why privacy? This country has always valued privacy. Isn't it some big Fourth Amendment issue? Gee, I don't know if I can justify it on abstract principles. Privacy promotes individuality, and thus promotes individual creativity and individual contributions. Is that a good enough answer?"

"No," said Martin. "People living with no privacy could still make large individual contributions. I took a history class once where the prof talked about the Middle Ages, with its lack of privacy, its anonymity, and how liberating it could be—even inspiring creativity. Like the cathedral builders who worked only for the glory of God. He said privacy and individualism were overrated in the West, had been since the Renaissance. Before then we didn't have much privacy."

Martin paused for several seconds. "Anyway, I'm like you, I guess. It would really bother me if I knew I had no privacy anywhere."

"We have a lot of privacy here," Ralph countered. "I'm proud of that. Because we *officially* do all kinds of tracking and surveillance in public, we're prepared to know about public activities by companies and individuals. A company can put up a surveillance camera in their own private space—we encourage it, but in every case we've been able to talk them into sharing the images. We don't allow business surveillance of public space. A big corporation or wealthy individual can't have you followed around here with no one knowing about it. We're committed to evening the disparity of power between individuals and corporations or government. I want to log data about public activities, for use at need, but I don't want *anyone*, especially not any mega-corporation, snooping around after private citizens, though anyone can make their own videotapes. The result is we have less private and surreptitious tracking than in similar towns."

"How do you know that? Do you have published data? And

what company would want to track an individual in this small town anyway?"

Martin followed Ralph into the den, where they both sat down. "You might be surprised," Ralph said. "Surveillance of individuals occurs all the time, for insurance reasons, or by private detectives, say, related to marital difficulties.

"Oh, I forgot to tell you," continued Ralph. "Somebody messed up the town's official homepage. Before I disabled it, instead of 'Rockcliff,' it read 'Walden Three Labor Kamp,' with a swastika, not drawn backwards like the one outside town. I think it was probably the same hacker. Dammit, that makes me mad."

"Who handles security for you?" Martin asked.

"Me. I handle it. I'm the Security Officer, such as it is."

"And what about the regular security alerts, the patches, all the precautions?"

"I admitted earlier. I haven't been doing it—just been whistling in the dark."

"That's almost encouraging," Martin said. "This afternoon I'll go down a current list of standard security holes. Stick the patches on. This hacker is probably just using a simple hole that he'll find plugged tomorrow. I'll stay up as late as needed today looking around, seeing what I can figure out. I have several expert friends who are often on the net at odd times; they'll have advice. This development doesn't surprise me, though. I said it before: your system's wide open to the sophisticated hacker.

"Another question," Martin went on. "Why haven't you managed to track your hacker? If he's spreading his flyers all over town, can't you see him on your monitors if you're doing so much surveillance?"

"We've been trying," said Ralph. "The guy is clever—he keeps changing tactics on us. First he sent data to the newspaper. The owner, Patrick Hoffmann, my 'friend' who sold us the blimp, published that set, and we raised hell. Because of our complaints, or maybe in spite of them, Hoffmann said in an editorial he wouldn't do it again. The second and third sets were distributed by hand. We got permission to retrieve data near the distribution time, but the software couldn't get anything. Since then the hacker's mailed his leaked

data, sending it to enough people that it's gotten out—he sends me a personal copy. Such arrogance. Our mail system's anonymous, like anyone else's. We're not even scanning most mailboxes, and of course we can't paw through boxes looking for suspicious letters."

"Speaking of Hoffmann I have one other item to show you." Martin pulled a folded sheet from his pocket, handed it over. "Recognize it?"

"Yeah." Ralph made his just-sucked-a-lemon face. "The Walden Three editorial that Hoffmann published—written by Bob Laherty. Where did you get it, and why would you want to look at it?"

"Father Joseph dropped me a copy in the mail. We'd talked about it, and perhaps he thought I'd be interested."

Ralph handed it back.

"I was looking for a smoking gun," Martin continued. "Falsehoods, distortions, ignorant comments. They weren't there. Instead, I find a long quote from Joseph Wood Krutch."

"Yeah. Instead of making ignorant comments himself, Laherty quoted an ignoramus. Please don't recite it again."

Martin paid no attention to his request. "Krutch was not ignorant, whatever he was. He was trashing Skinner here. First Laherty quoted Krutch as saying that human nature no longer existed at all for Skinner—just something changeable, as much or in whatever direction you wish. Here's the rest of the quote from Krutch. 'Since no human nature capable of revolting against anything is now presumed to exist, then some other experimenter—conditioned perhaps as the son of the commandant of a Nazi labor camp—might decide to develop a race of men who found nothing more delightful than inflicting suffering, and to establish a colony to be called Walden Three.' Well there's your Walden Three, a Nazi concentration camp."

"What loathsome debating strategy—call someone you don't agree with a Nazi. Krutch did it to Skinner, and Laherty by implication to me."

"You're not being fair. Right afterward Laherty admits this town is no Nazi labor camp. He's worried about dark possibilities, about loss of privacy rights, about control of individuals—what you and I keep discussing. In fact, this just occurs to me. He calls on the

townspeople to follow carefully what you are doing in the town. Isn't that ironic? That's what *you* want to do—keep track of what's going on."

"Yeah, Laherty is devious, just like his buddy Hoffmann."

"You know, Father Joseph seems to respect Laherty; he called him a friend."

Ralph snorted, almost choking. "Yeah, Laherty can also be charming. Even that swine Hoffmann can be charming when he works at it. Did I say 'swine'? Hoffmann's a toad—a giant, fat toad with warts and poison skin."



In the early afternoon the cloudy weather cleared. Martin was relaxing with the newspaper, mustering ambition to work on security problems, as he had promised Ralph.

The phone rang, and after a short delay Ralph announced: "We're going to have company. Kevin—you know, Susan's son, you met him at lunch—is coming over, and he's bringing Becky's little brother, Michael. Let's see, he must be eleven now, and Kevin just turned sixteen. Susan works this afternoon and into the evening, until eight, at the health clinic." Ralph ran on, giving Martin more information than he wanted to know about the clinic and about the two young computer nerds who were coming. They liked to play some new distributed game at Ralph's because he had such a good phone line.

Martin worried that tying up the phone lines would keep him from starting his work. But there were two lines; maybe they could share.

Susan soon dropped off the two boys without stopping in. Kevin looked younger than Martin remembered—certainly not sixteen, while Michael was a two-thirds-size near-clone of Kevin: straight dark brown hair instead of Kevin's curly black, but the same small, skinny frame and glasses—a poster child for the computer generation.

Martin decided to intercept them before they started their game. "Do you guys know about SATAN?" he asked.

Ralph had been working with seedlings for his garden, tomatoes and beans, getting them ready to plant outside. He stuck his head around the corner of the kitchen door. "What? What did you say?"

“Relax,” Martin said. “SATAN, in all caps, is software, related to computer security. I promised you I’d get to work on the town’s network this afternoon.”

To Martin’s surprise, not just Kevin, but also Michael knew all about SATAN, the software that checked networked computer systems for vulnerabilities. “Here’s my plan,” Martin said. “I’m going to fetch the SATAN software from one of the mirror sites and use it to probe the town’s computers. Do you want to watch?”

They both answered yes—the first bit of enthusiasm he’d seen from Kevin about anything. Michael looked like a religious convert getting ready for paradise.

Martin sat down at one of Ralph’s computers, after having the boys pull up chairs on either side. Martin first connected to the town’s server. “I don’t know off the top of my head where SATAN is. I have that information on some computers in San Francisco, but it’s easier to use an Internet search engine.”

Martin typed “SATAN” to an engine and had the downloading information in less than two minutes. He was glad the Internet was responding so fast that afternoon.

He continued typing quickly. “Ralph already has PERL on the computer, so that will speed things up. You guys look the other way while I type the root password.” Ralph had reluctantly given him “privileged” access the day before. Martin retrieved several megabytes of code using anonymous ftp. He explained to the boys how to use the “MD5 message-digest fingerprint” to ensure they had uncorrupted software. Then it was a matter of compiling the code and invoking it through the web browser. Michael giggled at the picture of an actual satan, complete with red skin and horns, that appeared on the screen.

“Cool,” Michael said. “Wait till I tell my dad.”

Martin groaned inwardly. He’d forgotten that Michael’s father was a priest. Michael’s family would think they were exposing him to some devil-worshiping cult. Michael was all impatience when Martin explained that the satan image and even the name were mostly a gag by the inventor. “Dan Farmer, who came up with SATAN, is about as weird an Internet guru as you’ll ever hear of, but he has high ethical

standards. I actually know him.”

Kevin asked a question unexpectedly: “Are you a member of any of the privacy-oriented organizations, like the EFF or CPSR?”

Kevin seemed impressed when Martin explained the he helped maintain the CPSR website. Then Martin turned back to SATAN. The Prince of Darkness was producing a huge problem list, as Martin expected. The boys seemed fascinated by Martin’s explanations of the various vulnerabilities. “If the town had installed a firewall,” Martin explained, “we’d have had to breach it, but of course there’s none.”

Ralph interrupted with an offer to get pizzas for dinner. Martin expected protracted negotiations about ingredients, but they always used a standard order which he went along with: cheese and mushrooms for Kevin, who didn’t eat meat, and two elaborate combinations for the others.

After the group had gorged on pizza, Martin started the tedious process of installing patches and fixes for the various problems, with the boys hanging onto every keystroke.

7. Conversations

Tuesday evening, March 31

Martin Davis had spent much of a boring Monday and part of Tuesday installing security patches. It all seemed to take longer than he'd expected. Tuesday afternoon was wasted with other maintenance. After a late dinner, Martin went with Ralph Barnes back to Ralph's house. Ralph led the way through his unlocked front door to the study. He fetched Martin a database manual and muttered about "reading his mail." Soon Ralph was hooked into the town's mail server, skimming items.

Martin had stocked the refrigerator himself, since Ralph always ate out. Ralph had explained that if there was food available, he would just eat it, so Martin bought only low-calorie items. Martin fixed iced teas for the two of them and returned to the study.

"What's this?" Ralph said as Martin came into the room. Then, "Good grief!"

Martin got up and stood behind him. Ralph had a mail message on his screen.

"I think it's from our hacker," Ralph said, "but what does the header refer to?"

Martin pulled up a chair. "Just an anonymous server. I thought they'd closed down the one in Sealand."

Glowing letters filled the screen.

```
From daemon@anon.sealand.secure Tue Mar 31 22:43 CDT
To: ralph@services.rockcliff.com
From: an236584@anon.sealand.secure (_A_Turing_Too_)
X-Anonymously-To: ralph@services.rockcliff.com
Reply-To: an236584@anon.sealand.secure
Date: Tue, 31 Mar 04:11.42 UTC
```

Subject: You brain-damaged vermin

You bastard wasps sit in your comfortable chairs, telling `_us_` what to do. We know what you're up to. You want to control everything and everybody. And you don't have a `_clue_` in your tiny brains about what kind of people you are. Privileged white males who have never known any hardships. You want to preserve your power and status, to fight the emergence of a new multi-cultural society. First you will get us all registered. Who has guns and where they are. Who are the "trouble-makers" (= those capable of independent thought). Then you'll clamp down.

Who are you to tell us that safety and security are more important than freedom, more important than change? Your machines and your technology are destroying society.

:

The colon at the screen's bottom meant there was more of the message.

"How does this anonymous server work?" asked Ralph.

"First you register with the server—send them a message. They assign you an anonymous identifier, the 'an236584' in the message. You can also specify a nickname, like a handle that the CB radio people use. This guy is calling himself 'A Turing Too,' with underscores."

"What's his handle mean?"

"It must be a reference to Alan Turing—you know, *the* Alan Turing."

"The name sounds familiar," said Ralph. "Who is he?"

"Are you serious? He *started* the whole field of computer science in the 1930s by finding unsolvable problems. He helped break the German Enigma code during World War II. I think our hacker wants to be Turing's successor."

"Yeah, I sort of remember now, but I never liked theory much." Ralph was staring at the screen. "Can we send a message back to him?"


```

;:. /___ ..'---. /-' ..---. _._/ ---.
| ;' ;'| \--/;' ,' / \ , \
`.fL_;;,_/-.._) / \---'---'\-._) / --\.._) /
_A_Turing_Too_, an3236584@anon.sealand.secure

```

```

-----ATTENTION-----ATTENTION-----ATTENTION-----
Your e-mail reply WILL be *automatically* ANONYMIZED.
Report inappropriate use: abuse@anon.sealand.secure
For info or non-anon reply: help@anon.sealand.secure
For problems: admin@anon.sealand.secure

```

“He’s a friend of Hoffmann?” Martin said, scanning down the message.

“That doesn’t surprise me; I always thought Hoffmann was behind this. The skunk. Useless to ask him, though.”

“Have you noticed,” Martin said absently, “that you always use an animal name when you refer to Hoffmann?”

“Yeah, how else? I see that the hacker is mentioning Laherty, too.”

Then Ralph read further in the message. “Jeez. He crashed me the other night—Oh, my God! He’s messed up our database.”

Ralph pulled up another display window and connected to the health records server. He poked around for a bit, then said, “He’s right. It’s completely trashed. The clinic’s closed tonight, or I’d have heard about it already. Nothing to do but restore the system. I hope you have ideas to help, Martin. He crashed it just a while ago, so he can again after I get it back up.”

Martin felt discouraged. He’d just finished beefing up the security of these computers, and the hacker still crashed one he had worked on. What was going on here? The hacker had only moderate skills; this network and the attached computers formed a fairly simple system, so how did he break in again so easily? Martin then had an idea he decided not to share with Ralph. After a bit more thinking, he said to Ralph: “As soon as we get to your server, get there physically, I mean, I want you to reboot and change the root password. Then I’m going to make a number of other changes, mostly disabling services you haven’t been using anyway. We may have to announce password

changes to a number of users. Another thing: we have a short time span during which this hacker crashed your health system. My little PC is still snooping on the network, and it should have saved some data. The hacker has no way to know about my snooper. But for now let's send a reply back to him."

"A reply?" Ralph turned to stare. He had the database server in single-user mode and was loading backups from tape. "I'm busy now. But why would we want to reply to this creep?"

"To get more information. Maybe to reason with him. Whatever. Keeping them talking is often a good strategy—one used by the FBI against the Unabomber."

"Won't it take forever? To Sealand and then back near here? Then his reply to Sealand and back to us?"

"It might be quick, at night like this. And it's even later in Sealand. Maybe just half an hour. You've got another machine here. Let me get to work answering him while you carry on with your backup. I'll draft a message to send in your name."

"You go ahead. What I'd have to say wouldn't be pretty."

Martin set to work composing a reply, first looking over a copy of the hacker's message. The "fL" in the picture stood out, so he asked Ralph if it could be a clue.

"I doubt it," said Ralph. "He probably lifted the picture off the net for his sig. Surely he wouldn't make a mistake like that."

Martin also noticed the use of "we" throughout, but when queried, Ralph thought it was just the same way the Unabomber always used "we" in his communications—a loner trying to sound like part of a larger, more powerful organization.

After Martin finished the message, Ralph looked it over and said, "That's dull. You want to put him to sleep? Anyway, it's a waste of time to send anything to this criminal. If he's willing to crash a computer system, he's not going to listen to you."

"That's the idea—say nothing controversial, just keep him talking."

They sent Martin's dull message off to Sealand. It only asked for more dialog, more discussion of free speech.

Ralph continued his restoring work while Martin thought about


```

> now with livestock. Then send physical data in one direction
> and punishments and rewards in the other. Just think of it:
> no more crime. No more troublemakers. No more dissenters.
> No need for courts, or prisons, or laws, or privacy, or bills
> of rights. Just legions of obedient people doing and thinking
> exactly what they are told by their all-wise leaders.
> Get involved. Get angry. Do something about it. It would
> be better to destroy this system and this society than to live
> without freedom.
> *****
> * "These [United] States need one grand national Vigilance *
> * committee, composed of the body of the people." *
> * -- Walt Whitman, 1856 *
> *****
an236584@anon.sealand.secure (_A_Turing_Too_)

```

“We should keep him talking,” Martin said. “And maybe I’m sympathetic with him. Why don’t you answer this time? I want to see what you say.”

“You’re sympathetic with this nasty creature?” Ralph crafted a reply. He was muttering and grumbling to himself as he wrote.

I see. You want no control of anyone, especially no control of what you do. You are a common criminal, and should be locked up like one. You filthy hypocrite, you’re trying to control me. We’ve always had interference -- what you call control -- by schools and churches and parents and friends, but less now than before. The free world you want is a world with people free to suffer, and all you can do is whine about control.

```

-----
Zuerst müßt ihr uns was zu fressen geben.
Dann könnt ihr reden: damit fängt es an.
(First you must give us something to eat.
Then you can talk: that’s how it starts.)
-- Bertolt Brecht
-----

```

ralph@services.rockcliff.com

“Ralph, what are you doing? That’s not going to influence him but just make him mad.”

“I don’t care. I’m tired tonight. He screwed up my system; then he cries about how he’s controlled. To hell with him.”

“You just see this guy as an obstacle to overcome,” Martin said. “As a ‘problem’ to solve. I see something different. I see a person with passion, with beliefs, who cares about the world he lives in. I don’t mean to co-opt him, but to redirect, to channel, to make use of his abilities.”

“Garbage! Excuse me. But this is a criminal. OK, not *just* a criminal—a little more than that, but not much.”

“Well, I hope we can find him for rehabilitation. You see, you’re in an adult mindset, whereas your tormentor may be high school age. He’s computer sophisticated, and I picture a minority, perhaps black, perhaps a woman. He has good English usage. Maybe we can find him this way. Think about a younger minority or woman you might know in town—someone who’s always seemed clean-cut and docile, but intelligent, well-spoken.”



Late that night Ralph and Martin were still working when huge amounts of electronic mail started arriving at Ralph’s internet address.

“Look at this,” said Ralph. “They’re spamming us—over twenty megabytes and more still coming in. Only a few dozen separate messages, though. Here’s a small one. Let’s see what it says.”

He pulled up a message from Arizona on the screen.

late wed 1 april

hi guys maybe you know all about this but I figured
 i would drop a line_____just kidding :-) ahhhh
 anyway i was hanging out at captain sting’s bbs when
 i got a call for vursors virtual jurors you know
 well i decided to be one cybertrials are such a gas
 they were trying four people and one town but one of
 them was for sure you ralph whoever you are
 the trial is still in progress never stops
 people just come and go slows down at night
 i really did not agree with the way it was going
 besides before they were hardly started they were
 posting your names as enemies of cyberspace saying

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get these people spam them destroy their credit      :-( ummmm
they posted 14 credit card numbers for four people
ralph barnes martin davis paul jordan david rollins  :-@ ohhhh
you all might want to cancel these cards cause
there sure will be a shit load of charges now
anyway good luck just thought you would want to know ;-) haaaa

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                "To err is human, to moo bovine      "A/^^\A
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Ralph's face turned beet-red; his already huge bulk expanded as he sucked in an air supply. Then he provided a list of synonyms for human excrement. "This is electronic vandalism, cyber terrorism." Ralph took several more breaths to calm himself. "We need to cancel the credit cards right now. I think I'll call Jordan and Rollins tonight even though it's so late. It's scary how easily they can get hold of card numbers. Our credit card system stinks—so stupid—just charge to a number, any number, no authentication at all."

"Well, not any *random* number," said Martin. "The numbers for a given company start a certain way, and there's a check digit, so only ten percent of random account numbers would be valid."

"Oh, give me a break. All they have to do is construct or steal a valid number." Ralph was starting to call his co-workers. "They can paw through trash for receipts or hack into credit reporting companies. Without an effective ID of the individual, there's no check that a stranger isn't using the card."

"Still pushing national IDs? You never give up, Ralph. But it's irritating that *my* name was on the list. I haven't exactly been introduced all over town. How many people know me here, anyway? I *need* my credit cards—they're my only source of money."

In the background a display showed a continuing flood of arriving electronic mail, at a steadily increasing rate. Ralph was still visibly disturbed. "We've got to take action. If the e-mail gets worse, it

could slow our computer to a crawl and clog our network. What will be next? Sabotage? And I just remembered—the hacker gave us an ultimatum, with noon Sunday as the deadline.”

8. A School Visit

Wednesday afternoon, April 1

Martin left the house about twelve-thirty. He'd promised to meet Becky at one o'clock and had decided to walk. He had time enough—the town was so small you could walk to most parts in thirty minutes. He tried to recall the town's size—were there really thirty-four thousand people? It didn't seem possible. There was just one high school, just one hospital, though at least two middle schools. True, the downtown area was eight blocks long, with a central square and the four-story city hall. And the town had its own small college, its own historical museum.

Martin was still tired from staying up half the night. By three in the morning, he and Ralph had changed passwords and canceled credit cards, and had eaten at an all-night diner before staggering off to bed.

Martin walked through beautiful trees that loomed over the streets, with bright dappled sections where the sun was shining through. There were sidewalks made from actual stones. As Martin passed an alley, two little boys and a girl, looking like they should be in a pre-school, were poking at a pigeon on the ground. "Is it dead?" he heard one say. He resisted the temptation to intervene. It wasn't his town; these weren't his kids.

He arrived early at Alf Landon middle school, an undistinguished single-story brick building. Becky hadn't said exactly where to meet her, so he was stuck just looking around. Did they have a computer laboratory? His first impressions of the interior were of an open floor plan with diverse facilities stretching into the distance. Students carried out equally diverse activities, some singly or in small groups, with several larger groups. Overhead, the lights flashed to signal

some transition of activities. Assuming they used lights to cut down on noise, it was only partially successful—there was confusion and talking as the larger groups broke up. In the midst of the milling students, Becky appeared and greeted him almost shyly.

“A few things came up that I have to do,” she said. “Why don’t you observe the discussion group over here.” She talked with a young male teacher, then introduced the two men and left.

Martin was seated to one side as a dozen students began discussing an article they had evidently studied—an unusual mixture of Lewis Carroll’s Alice with relativity theory. The comments were spirited, with hardly any intervention by the teacher. Soon simple comments gave way to heated arguments: Was the image of Alice really smaller if you observed it from farther away? The final five minutes were occupied with a strange “debriefing” session in which students candidly critiqued their own and others’ participation.

Martin felt almost disoriented from all the activity around him when Becky came to his rescue.

“Where’s your computer lab?” he asked.

“Distributed. There’s no actual *lab*. Just computers where they are needed. From the beginning I wanted educational needs to drive computer use, not the other way around. The biggest and most effective changes haven’t involved computers at all: a more open setting, more self-paced work, and more individual initiative about what activity to pursue at any given moment. We wanted to de-emphasize conventional lecture-type teaching, to favor recitation, analytical thinking, critical reading, problem-solving. Actual computer skills are way down on the list.”

Martin wandered through the school with Becky. In spite of what she had said, there were computers everywhere, most of them in use. Martin looked at the activities of several students and asked Becky if they were taking exams.

“These are intelligent tutoring programs. As students work along, the program assesses their progress, examines them, if you like. The program also keeps a time log of the amount of effort, so it’s not feasible to cheat. For these subject areas there’s no worry at all about plagiarism, or cooperation, or cheating on exams. The software doesn’t

bore better students with endless repetition, either. It adapts to their progress and gives immediate feedback. And we can get a summary of each student's progress. We use these for mathematics especially, and for segments from other areas—structured areas that involve rote learning. The computer-based education frees teachers to work one-on-one or with small groups. The other type of subject area we have is project-oriented—specific projects crossing subject boundaries that the students work on for weeks, often in teams. Computer use is not yet so relevant for these.”

It became evident to Martin that there were far more computers than he'd thought at first; many were tucked away so students could work without interruption.

“How'd you afford all this hardware?” Martin asked.

“A grant from the phone company started it up. Then money from two other companies. And you'd be surprised what industry calls obsolete and will give away. The hardest part was getting computers for the teachers and getting release time for training. Oh, and getting money for software. The board thought hardware was all you needed. We use volunteers, too. Kevin, uh, I guess you met him, right—he even comes by on his bike three afternoons a week. He's old enough to drive but insists on biking. He helped get the network going, and he helps with repairs, with software installation.”

They watched students weighing small fluffy chicks in an area obviously used for biology topics. “This is Mr. McAndrews' famous chick experiment,” Becky said. “Each year when he teaches nutrition, he has each student raise a chick. They feed it whatever they want, whatever they eat themselves. Meanwhile McAndrews feeds *his* chicks commercial chick food, Purina Chicken Chow or the like. It really gets the kids' attention. Their chicks eat spaghetti and potato chips, and they soon lose their feathers, drop in weight. They look awful, especially compared with McAndrews' chicks.”

“Oh, gross,” Martin said. “Weren't there complaints?”

“Whatever we do, there are always complaints. We've been getting results, though, and the griping has gone down.”

“So you've got the standard modern education tricks here—ones that schools have used for years. What are you doing that's new?”

“Actually, there are even more ‘tricks’ than you see right away. We have incentive programs for good behavior, a student court for discipline. And as I said before, we’re using the computers for major course segments, and to support projects. Just as an example, most students learn a whole year’s worth of the ‘Algebra One’ curriculum with no teacher intervention at all—well, almost none. That’s not common yet in most schools. And all records, across the whole town, are computerized and coordinated.

“We have connections to the outside world, too,” she went on. “Internet access, of course, where students have their own homepage on the web. We just have a few exceptions; in those cases the parents objected. And we also have access to a variety of special courses we don’t have the resources to offer. And access to formal educational materials, like libraries and museums. Much of this is just now getting under way. It’s more important at the high school level.”

She started sounding like Ralph at his most enthusiastic. “I expect computers to revolutionize teaching at all levels. Much of the drudgery that teachers face should be shifted to the computers. Then there will be time for effective individual tutoring. Software created using hundreds of man-years of effort will support subject areas that have clearly-defined goals. World-wide access to information will be the environment where our students do larger, more ambitious projects.”

Martin had to admit, everything at her school seemed smooth, even if a bit manic. “So you’re conditioning them—a scene right from *Brave New World*: ‘I like being a Beta. The Alphas have to think all the time. And the Gammas work so hard. It is fun being a Beta.’ Repeat a thousand times in their sleep.”

“You don’t like conditioning?” she said.

“Well, no. Who does? Who wants little robots saying just what they’re supposed to, what they’re programmed to say?”

“I take it you had no younger siblings or contact with younger children?”

“That’s right. Just an older sister.”

“So you never tried to take care of children, to bring them up. We always condition children, all the time. Sometimes we do a bad job

of it, that's all. What does it mean to guide children, nurture them, raise them? It's all just conditioning."

"I suppose you have an easier time here than in a school with 'big city' problems."

"We do," she said. "But this town has most of the problems of society in general and these problems are mirrored in the schools: divorce, drugs, gang activity, abusive parents, abandoned or unwanted children, needless health problems, AIDS."

"You have all that in such a small town? Here in your 'River City'?"

"Don't assume that smaller rural areas are spared. But in the four years I've been here, I can see substantial change. When I came, there were gangs out of control, lots of drugs—mostly in the high school and above, but spilling down into the middle schools. I can claim only a little of the credit; the problems galvanized the whole town into action."

After another hour, school ended. When they left, a number of students stayed to finish work. Martin thought some of these children should be out playing baseball, but he didn't say anything.

"I shouldn't have made fun of you yesterday," Becky said as they walked to a parking lot, "when you thought a priest couldn't have a daughter. I get that reaction all the time."

"The chances seemed so low, I didn't consider it."

"Chances! So you're one of those people who thinks in terms of numbers, of probabilities."

"Yes. Yes I do. How else?"

"Yours isn't a bad method, just not the only way. It didn't work this time, and how often will such a situation come up for you? How else? Just live your own unique life and forget the numbers, at least most of the time."

They stood beside her car, parked behind the school. "I've got several errands to run," she said. "Later, would you like to get together for dinner?"

Martin agreed to the plan, while wondering if this would be a date. He'd solemnly assured Ralph earlier that he wasn't going on a date. He turned down an offer of a ride and watched her drive

off. They were to meet in two hours at the Summit Street Cafe—guaranteed home cooking.

Martin spent a boring time at Ralph's and went out to his rental car before Ralph got back from work. Martin's redbird friend was still there, a beautiful scarlet male cardinal who loved to admire himself in the car's rear view mirror. Or did this frantic little creature think he was competing with another male? The redbird flew off as Martin started the car to leave.

For Martin, Becky's choice of a restaurant was dull. Fried chicken, mashed potatoes. He was used to such unusual places to eat, every type of ethnic food, that it was hard adjusting to this town. At least Becky was interesting to talk with.

She had studied in England for a year, and Martin had spent time in England, too, so they stuck with England through history, literature, and geography. They must nearly have run into one another at an *Othello* performance in London. "Why didn't you say hello?" she asked.

After dinner, she excused herself to go to the ladies room. "I'm a diabetic," she said. "I must check if I need medicine. It'll just be a few minutes."

Martin felt awkward when she came back. The mention of an illness had let the mood slip. "They've made progress in treating diabetics," she said, "with simple strips to check for glucose levels and get the right amount of medicine or insulin. If you're careful, there's much less chance of complications."

"My sister often talked about diabetes. About its treatment and prognosis." Becky said nothing. Stupid, stupid, Martin said to himself. Why mention prognosis? He hurried on aloud. "Not about these glucose strips, though. She was a doctor, uh, a *real* doctor as she would say—a physician."

" 'She was,' you said. Is she deceased? "

"Yes. She died years ago. I'll always miss her, but it's not such a big issue with me any more."

Martin changed the subject. "Do you buy into what you're doing at your school? The controlling strategies? Shouldn't kids have a chance to develop naturally, to be what they want?"

“Let them be what they want? Don’t you believe in original sin? They all *want* to be criminals, sociopaths.”

Martin stared at her over the candle on the table. “You’re joking, right? Pulling my leg.”

“Maybe a little. After all, even the high school mascot is a burglar: a raccoon. But I would guide them to become what *we* want them to be. We shouldn’t ‘let them be.’ Help them choose to be the kind of person we would want in our society.”

Martin was horrified, but tried not to show it. “Ralph’s been talking about making crime impossible, sort of a running theme with him. His proposals sound very controlling: technological gadgets force adults and children to toe the line. You’re saying much worse: Condition children so they do what you want. Now we’ve moved to Orwell’s *1984*. Remember the ‘Newspeak’ language, with no words for activities they don’t want citizens to think about? You asked me about original sin. Don’t *you* believe in free will?”

“Yes, I believe in free will, and a lot of other things, too. Eventually, the children must freely choose; we can only help them, prepare them. But you, what do you believe in? Where do you stand? You seem like a computer person who doesn’t like computers, who doesn’t want to see them used.”

“I don’t want the computers dictating policy, or taking away our privacy rights, or destroying our freedom.”

Becky shifted her chair out from the table and leaned forward. “Tell me this. What do you think a school is? What’s the *definition* of a school? A place to baby sit children so the adults can go to work? Well, it is partly that. A place to bring out the creative abilities of each child, to make them think independently, to foster their development? Sure. A place for children to develop however they want? No! Guide them, mold them, prepare them, and yes, even control them. For me a school is also a place where we can make crime impossible.”

“Oh, damn!” Martin said suddenly. And he’d promised himself not to swear, not in front of this preacher’s daughter, practicing darn and drat and rats that afternoon.

Becky started. “What? That’s your response?”

“No, no, I just remembered I promised Ralph to see him early

this evening. It's not exactly early any more. Ralph's hacker struck again yesterday—bombarding Ralph with e-mail, retrieving credit card numbers, including my own. I had to cancel them all. There's nothing like personal involvement. Anyway, back to your school, I think you're over-simplifying. Even if you wanted to, you couldn't make perfect little citizens out of these children."

"No, but it's a worthy goal. We can get part-way there. *We are* getting good partial results."

"Frankly, it all sounds naive. You called me a computer person who doesn't want to use computers. You sound like a computer fanatic who thinks the computers will easily solve all your problems."

"It hasn't been easy, and I'm not that naive. The computers are helping, that's all—just a tool, one of many tools we will use."

Martin was becoming his normal argumentative self. "And you're following the recommended psychological routine? Only positive reinforcement? Don't bruise their little egos."

Becky looked offended. "You must be reading too much B.F. Skinner. We use whatever methods are effective, including negative reinforcement—aversive techniques. We've had to be tough with our more difficult students. Small as we are, we have a special school setting for the disruptive and uncooperative. ADHD students, though, have to go sixty miles south for a school." At Martin's raised eyebrows, she said, "Attention Deficit Hyperactivity Disorder. And there are other learning disorders we don't have the resources to handle. As I mentioned before, we also use remote virtual classes for unusual subject areas and for special students."

Martin felt the conversation had gotten too negative. He deliberately shifted to a favorite topic: simulation, and how it might be used in their environment. Becky was interested in his work with real-time simulations, and they discussed the educational possibilities of ever cheaper and more capable hardware.

They each had driven separately to the restaurant, so they said good-by across the top of her car. Not exactly romantic. Martin thought the evening had sagged at the end. He resolved to be less argumentative the next time—if there was a next time.

9. Evil Influences

Friday evening, April 3

Careful over the ears,” Ralph was saying, as Martin eased on the VR helmet. Ralph had been called in for a late-evening session, and after an hour had phoned, suggesting Martin come to the city hall for an interesting display. He’d taken Martin to the basement, where he and his technicians worked on computer hardware. Furnace and water pipes loomed above, while wires and computers covered two rows of tables against the walls. Ralph had equipment jury-rigged on a table in the center of the room. “Have you ever seen, uh, ‘experienced,’ I guess you say, virtual-reality pornography before?”

“The virtual reality of course, but not the pornography. I saw hard-core porno in college, though. I don’t expect this to shock me.” Ralph helped Martin slip into a special jacket and gloves.

“Stand and relax.” Ralph adjusted straps, plugged in connectors. “You’ll be viewing a replay of the last VR session of the person we pulled in—a twenty-four-year-old who lives outside town. *He* participated in the session, so that when he raised his arm, he saw an arm in just the right place. When he slashed with a knife, the image reacted correctly—blood flowing or whatever. But you’ll just be watching. As an active participant, his experience was more realistic than yours will be. Why don’t you carry on a running commentary about your impressions after I turn it on?”

“OK. Yeah, here it goes.... A remarkably beautiful little girl here, maybe eight years old. I assume you viewed this, so I don’t need to describe everything.” Martin said nothing as the action unfolded. “She’s acting like a prostitute, coming on to him, and he’s already, um, ‘engaging her,’ you might say. Can we break off for a second. I have questions.”

The scene froze with a pause command, and Martin said, “Does he have extra widgeits, apparatus, like maybe a doll to play with?”

“You got it,” said Ralph. “Along with the software, they sell inflatable models that one can actually grab and fondle. Soon they’ll have full-sized rubberized dolls hooked into the system that will respond appropriately. That’s only feeling. What he sees and hears and smells comes from the VR helmet. Our boy had such an inflatable toy, but you’re just experiencing the replay. I’ve been talking around the real question. During this session, the, uh, gentleman we have locked up probably, ummm, got himself off with his toy, but I’m not sure. Finally, no, I only watched the start of this one. I didn’t need to see it. Does that answer everything?”

“Yes, let’s go on.” Ralph started it up, and Martin continued his commentary, after a delay: “OK, now he seems done with her.” Martin had to pause. “Now he’s hitting her around, and she begs for more.” Another pause. “He’s slashing at her with something, I guess a knife.... That’s really gross.... He’s cutting her all over the place, and she keeps saying how much she likes it. ... Now it looks like he’ll simulate sex with her again.” Martin paused longer. “She’s missing one arm!” He paused and watched, horrified. “Oh, jeez. That’s just....” Words failed him. Finally he signaled frantically, and Ralph turned off the machine.

“I had no idea this existed,” Martin said, taking off the helmet. “The sickest, nastiest images I ever saw. Do you know what he was doing at the end? No, I can’t say it. What does it do to a person who takes part in these VR sessions? He must have been off the scale to want to watch them.”

Ralph settled back in a wooden chair, put his feet on the table before him. “No, I think that’s a common misconception. Child molesters can appear to be normal—stalwart types, pillars of the community. I’ve known several such. They don’t see much of a problem with themselves; they rationalize it. They can lose track of reality. Certainly our boy was suggesting unusual activities with the girl he picked up, though he didn’t do anything.”

“What will happen to him?”

“If he stays here he may get sent to ‘sensitivity’ sessions. I hear

it can work well over time, but even at best it takes awhile. That's for the health people, the police, the courts. I'm glad I don't have to deal with all that, but I hope he can be treated."

"I see those pictures now wherever I look," Martin grimaced. "Are these systems illegal here?"

"Not the helmet, but this particular software is illegal. It's child pornography, after all. They just download it off the net. I hate to see censorship, but we've got to try to keep this out of our kids' hands, not to mention our adults'."

"Ralph, as a serious question, why is child pornography illegal?"

Ralph paused. "Umm, it promotes the exploitation of children. That's bad, that's really bad."

"But this was a virtual session. They started with a real image, I guess, but worked from there using computer graphics, without an actual child actress. Suppose the images were entirely digital, no children involved, no one exploited. Is it still child pornography? Is it illegal? Should it be illegal?"

"Yes ... well, maybe." Ralph said. "Oh, I don't know. I'd have to think about it."

"At least, there's no further they could go."

"That shows your lack of imagination. As I said before, there'll soon be motorized, rubberized attachments. Right now there are multi-user versions—say, two people participate. They can actually touch one another. If one 'cuts' the other with a dull plastic sword, there's blood. They can have group sex—actual sex with one another, and virtual sex with various VR objects. And even that isn't all ..."

Martin interrupted. "Don't tell me. It's nice to know we're breaking new ground in pornography. Thinking thoughts more disgusting than ever before."

"That's not true," said Ralph. "Haven't you read de Sade?"

"Well, I've heard of him, but I've never read him."

"He wrote pornography—in the previous century I think or maybe earlier. He was a sick man, and he wrote truly sick stories—nothing worse has ever been written."

"But *you* read him."

Ralph sounded defensive. “I had a roommate in college with several of his books, but I didn’t read much from them.”

“Yeah, sure.” Martin ignored Ralph’s glare. “So the VR session I just viewed is not a big deal after all? Kids could read de Sade and get the same kicks.”

“The same *subject matter*,” corrected Ralph. “But virtual reality is a new and dangerous development, near-life in realism. The average person will be entranced, captivated, where he would be bored with words on a page. Someone can try out new activities he wouldn’t normally meet up with. I tell you, I’m scared of this new pornography. Anyone can be desensitized to violence, to brutal, antisocial, deviant behavior, and that’s what happens. I think our society will face whole new classes of ‘schizophrenic’ behavior we’re ill-prepared to deal with.”

“Well, I’ve used virtual reality for network visualization. We look for anomalous activity on the net, to ferret out hackers. The visualizations help. I’d hate to give up the technology.”

“Who wants to give it up,” said Ralph. “Just not the inventive pornography you saw, and its ever-more inventive descendants. Do you remember a movie from years ago, where a vehicle with passengers was ‘miniaturized’ and injected into a person? They were the size of a blood cell. Traveled all over the body.”

“I saw it as a thrill ride at a theme park.”

“Soon we’ll be able to do that.” Ralph finished packing up equipment, then crossed the room to an old coffee machine he’d fired up an hour before. “Coffee?”

“Yeah, black.”

“The premise of converting a ship and several people to microscopic size is idiotic—scientific nonsense. But we’ll get the same effect with a micromachine, one with sensors and communication channels leading back to VR controls. You’ll *be* right there in the body.”

Martin sipped coffee. “And not just microscopic trips. Magnify me and I’ll take a trip through the universe. That’s what I want. See black holes and distant galaxies.”

“A *virtual* universe,” Ralph said. “At least in your lifetime.”

“Just a mockup, I know. We could get the real thing within the solar system. Not in real-time, though.” Martin paused. “Back to the subject of pornography, here’s another thought. Maybe we shouldn’t have any censorship, no matter how ugly it gets. Think about it in your terms. Censorship creates a ‘crime’—with no censorship the corresponding crime is impossible. Just what you want.” Martin leaned back triumphantly.

Ralph was shaking his head. “I agree that we want as little censorship as possible, but that’s not the same as *no* censorship. Did you ever hear of Lenny Bruce?”

“Just barely. A foul-mouthed comedian. Died of a drug overdose. But that was long ago.”

“He was famous for his ‘colorful’ language, all right, and his willingness to bring up any subject. A reporter once asked for his views on censorship, expecting total opposition to any form. I think he said something like this: ‘We must have censorship. Otherwise people will pay to see children run down in the streets.’ ”

“Your standard way to argue. Running down children isn’t a free speech issue.”

“Maybe not. But there are still limits, and not just with pornography. Like actually *inciting* violence, instead of advocating it, or teaching children how to kill with kitchen tools.”

“Yeah, yeah, the standard ‘yell fire in a crowded theater.’ But don’t take away my free speech.”

“You’ve got to have free speech, huh? Have you seen ‘The Terrorist’s Handbook’?” Ralph asked.

“Sure, everybody’s seen that. Directions on how to make bombs. Even practical advice. At least they advise you not to build them.”

“Well, I confiscated a how-to-do-it book from Michael, Becky’s little brother, a book that makes ‘Terrorist’ look like nursery rhymes. I can’t believe he’d printed his own copy and was reading it; it’s just science fiction to him, I guess. Here, I’ll show you a copy on the net.”

Ralph connected to a web site and pulled up a nicely-formatted page. He slid back to give Martin access to the computer.

“ ‘Destroy the World—A Practical Guide,’ ” Martin read aloud. “They’re not settling for half measures, are they?” After reading a few

chapter titles, like “Nerve Agents and Other Goodies,” and “Attack the Food Supply,” Martin said, “This is a joke, right?”

“The distinction between humor and seriousness gets blurred on the net. But I don’t think their ideas would work.”

Martin skimmed around in the document, moving back and forth from the table of contents to individual chapters. At one point the book was recommending purchase of a particular commercial farm insecticide—really a type of nerve poison—many, many barrels, and giving directions for distilling the active ingredient, the poison itself, into one barrel. A whole section dealt with exploding the barrel to get the correct “droplet size.” “Dress like a maintenance worker,” the text continued, “clean shaven, clean uniform. You should be able to kill everyone in a large building, say an airport, or museum, or office.”

A section in the “Biologicals” chapter told how to get plague bacteria (“you must play the role of a research bacteriologist—use a fake letterhead and a history of harmless orders to allay suspicion”), how to raise antibiotic-resistant strains (“best to steal the antibiotics from a hospital—they mainly worry about theft of hard drugs”), how to grow large quantities of the bacteria (“lyophilize (freeze-dry) it for use as an aerosol”). Martin shuddered as he read suggestions for eliciting the pneumonic form, for spraying it at international airports. (“A once for all worldwide spread of plague.”)

The chapter “Attack the Food Supply” talked of obtaining a plant pathogen called “wheat rust,” and spreading it by scattering from an airplane or by dumping into wheat shipments abroad. (“Wheat’s not the only food? Let’s move on to ‘rice blight.’”) Martin skipped past chapters titled “Nukes: Buy or Steal, Don’t Try to Build” and “Get Them to Destroy Themselves,” to the “Cyber Terrorism” chapter. He read for long minutes while Ralph pattered around.

“Ralph, under cyber sabotage, they’ve got sections with practical-sounding methods for knocking out the electric power grid, the air traffic control system, the phone system, the electronic banking system, the stock market—it goes on and on. They even write about military control systems for nuclear-tipped missiles.”

“Just fiction,” Ralph said. “Those computers are all hardened.”

“They suggest getting a job as a programmer in the particular

industry you want to take out. But there's more: they recommend a coordinated attack on the evening of December 31, 1999. Diabolical."

"Ah, relax," muttered Ralph. "I understand your worry: chaos anyway on the first day of the year 2000, so that if too much fails, people might totally panic. It's not going to happen."

Martin was still squinting at the book. "Does anybody read this stuff."

"Who knows? But that is not the original; there are many copies out there."

And why, Martin wondered to himself, did someone write this? The book didn't give the usual weak initial justifications—"for information only," "to better understand terrorists," and so forth—"don't try this at home, folks." Did they really want people killed? An obsession with overpopulation, an assumption that a huge die-off would help? Were they showing off, demonstrating how clever and knowledgeable they were? Or was the idea to protect society by calling these possibilities to people's attention?

Ralph interrupted Martin's reverie. "I'll say this: they may end up suggesting actions to disturbed people who might not otherwise come up with such clever ideas. These methods won't work to destroy civilization, but some of them could cause terrible problems for society."

"The 'disturbed' people will think of these anyway," Martin said. "The remainder of society, those are the ones who need to be aware of the possibilities. Take a child like Michael, for instance. He was reading this, of course just for entertainment, but even if he were serious, he couldn't take advantage of the techniques in the book. A child can't buy fifty-five gallon drums of insecticide."

10. Dinner Time

Sunday afternoon, April 5

They were sitting in Becky's car at one-thirty. Martin had returned his rental car days ago, and she'd insisted he drive hers—an old-fashioned touch.

"I don't like admitting this," Martin said, "but I'm scared, really scared."

"Oh, there's nothing to be afraid of."

"Look at my hands shake. I'm terrified."

She took hold of both his hands—maybe he was onto something.

"It's just dinner with my folks. They're nice. They're easygoing."

"Dinner with a girl's parents is the most frightening ordeal a guy ever has. And your father's a *priest*. Just wait. He's going to ask if I believe in God, or maybe ask me worse."

"What could be worse than that, you coward?"

"Asking me to say grace before dinner, that's what. 'Martin, will you please give thanks?' I want to go home and curl up with my computer."

"Out!" she ordered. "Out of the car. Think of yourself as a soldier in a foxhole, ready to assault a hill. Leap out before your courage fails."

Martin followed her advice, opening the car door quickly, then going up the walkway with her. The house before them was an interesting older Queen Anne with a beautiful widow's watch tower on the right and a wrap-around porch. The house needed repairs and a good paint job.

"What's your mother like?" he asked.

"Just relax," Becky started to open the door.

"Aren't you going to ring the doorbell?" Martin said anxiously.

“I *live* here. I don’t have to announce myself.”

They walked into a dark entry room, with a larger living room to the left and what looked to be a kitchen straight ahead—all fitted out with old furniture that suited it. Martin had expected neatness and order, but here instead was disorder—lots of bookcases and even stacks of books on the floor.

Becky’s mother, Margaret, was bustling and fussing around, looking harassed, putting final touches on a formal meal. He’d gone to church with Becky that morning—a trial, but at least she had coached him well: stand up, sit down, kneel, repeat. Calisthenics, aerobics. Joseph had of course run the service, while Becky’s mother had been occupied elsewhere with mysterious organizing roles—whether cooking or child care or what, he hadn’t found out.

Joseph came hurrying in, evidently from his church, and asked if Michael, Becky’s little brother, was there yet. In response to a negative answer, Joseph and his wife looked at one another and decided somehow, perhaps by telepathy, to start dinner without him.

After small talk, after sitting down to dinner, after a short simple prayer by Joseph, came—more small talk: the weather (nice) and peas (hard to eat). Martin thought he might survive.

Ten minutes into the meal, Michael arrived breathless.

“Mom, I couldn’t help it. I got stuck at George and Kate’s car wash. It’s for the Club.” Don’t ask, Martin told himself silently, what “the Club” is.

Michael was surprised but happy to see his friend Martin. As he ladled food, he asked pointedly why Martin had come to dinner. Becky’s mother explained that Becky had invited him.

A light seemed to dawn, and Michael said quietly, as if to himself: “Thank goodness. You know, it’s embarrassing to have an old maid for a sister.”

Becky actually blushed, while her mother told Michael to hold his tongue. She went on to say they’d gotten a letter from their middle child. To Martin she said, “Sarah’s in Basel, Switzerland, singing in the opera there. I wish she had a job in America, but there are so few chances here.”

Michael, on his home territory, was much more open and ar-

gumentative and opinionated than he'd been a week ago Sunday at Ralph's house. "Are all eleven-year-olds like this," Martin muttered to Becky, "or is this one just precocious?"

To change the subject, Joseph held up his fork for attention, getting into a college lecture mode. "I've been thinking about Skinner's Walden Two. The town was a group of like-minded volunteers, an artificial community created by assembling these volunteers, with no dissension in evidence and no diversity. That may give stability, but it doesn't solve our problems with existing communities." The others were busy eating, but he sped on anyway to forestall any interruption. "I don't just want people who agree with me. A healthy community needs diversity—ethnic, cultural, religious, you name it."

Martin was glad for a chance to speak. "I finished the book a few days ago. Interesting ideas, but a one-dimensional society, except for the main characters. And having all volunteers would make agreement easier, as with a Mennonite community."

"If you want a static, dead community, you can drive out diversity. To me, Walden Two seemed dull. A few hundred or a few thousand people interacting, all voting the same way, more like a cult community than a town full of Mennonites. No connections with the outside world, at least not that he mentioned."

"What about this town? It looks like all WASPs?"

"Well, not as much ethnic diversity as a large city, though partly because of the college we have minority ethnic groups here—there's more variation than might appear. Three weeks ago there was an altercation involving two Muslims living here. Local toughs were making fun of their clothes and then followed them to their mosque, walked in and ridiculed it, too. Not very fancy, but it's their place of worship. Our Committee intervened forcefully for a change."

"Your committee?" asked Martin.

"An anti-defamation group," said Becky. "Dad is practically 'Mr. Ecumenicalism' around here. He's involved in several groups to promote tolerance."

"Yes, we have the standard mix of ethnic and religious groups," Joseph said. "Just a normal smaller American town, with a few high-tech touches."

“And the high-tech touches?” Martin said.

“You’ve been working with Ralph, so you should know. The plan is to spread technology through the town’s infrastructure.”

“How will you do that? Can you give an example?”

“Margaret,” with a gesture to his wife, “is Chairman—er, Chairperson—of the Hospital Control Board. Can you tell him about it, dear?”

Becky’s mother put down her fork and turned to Martin. “It’s been a great deal of work, but rewarding to see progress. We first resolved to coordinate health data across the town. Ralph helped get the data computerized and centralized, and we’re doing well with that. The children can’t escape their immunizations—even the transients get caught and vaccinated quickly. Most towns like this have records scattered, in every doctor’s office and hospital.

“The next project—we’re still working on it—tries to identify those at risk for health problems. It’s computerized, and it’s already doing a good job notifying people that they need a checkup or should change their lifestyle.”

Martin felt invisible hackles rise at the mention of “changing their lifestyle,” but he kept quiet.

“We have many other plans. The big limitation is money—how to pay for it all.”

Somehow Martin made it though the meal and the obligatory conversation afterwards. Becky’s mother fetched ice cream and then cleaned up while they solved the world’s problems, or at least the town’s.

When she returned to the living room, Martin asked if he could look at the widow’s watch upstairs. “I rent an apartment in an 1870s house in San Francisco,” he said, “and I’m fascinated by these old houses.”

He felt miffed when she wouldn’t let him go upstairs. “It’s not cleaned up,” she muttered. His asking and being so pointedly refused made for an awkward moment.

Martin was then trapped for a time by Michael—dragged over to Michael’s computer to look at his web homepage and at some of the work he was carrying out with Kevin.

Later, alone with Becky, Martin said, “Your mom looks sort of stretched out—nervous, tired, I don’t know.”

“It’s that obvious, then,” said Becky. “I need to talk with Dad. You see, he’s what they call a workaholic. Well, maybe that’s too negative a term. Anyway, he’s on call all the time, works constantly. But it’s his show; he gets the credit and doesn’t notice the hours. Meanwhile Mom’s stuck with all manner of scut work, people in the church watching her constantly.” She started thinking out loud, no longer talking for his consumption. “Mom needs recognition *and* a break, and it has to be subtle—I can’t arrange for an appreciation plaque.”

She turned to him. “Did you notice any eyes on us in church?”

“I was working at my invisibility spell. Too busy to notice.”

“They were there, watching our every move, especially the L-O-Ls, the little old ladies. It’s nothing bad, but there’s always interest in a minister’s family. And if I were to show up in a low-cut dress or with a tattooed biker, the gossip would fly.”

“It’ll take a day or so, but I can get tattoos.”



That Sunday evening Becky and Martin were meeting Ralph for dinner at the town’s only Mexican restaurant—at least Ralph claimed it was the only one worth considering. He was already there, working on a margarita.

“Ah, here’s Rebecca,” Ralph said, standing up.

She made a face. “You know I don’t like my name.”

“What’s the matter with it?” Martin put in.

“It’s the nickname. I can’t get rid of it. Sounds like someone cute and trivial.”

Martin proceeded to order what Ralph was drinking, without the salt, while Becky got a diet coke. Colorful papier-mâché fish hung from the ceiling. The waitress looked like a fresh-faced high school kid, rather than the hardened criminals Martin was used to. Ralph, who seemed to know everyone, knew her too. When polled for advice, she recommended the chile rellenos, stuffed with an eclectic mixture unheard of in Mexico.

"I'm worried that our hacker's deadline has passed," Ralph said during the lag time before the food came. "You remember noon Sunday, *this* Sunday, was his time to cut loose on us. I keep wanting to access the computers, to check for vandalism."

Martin was nervous, even feeling his own heart in his chest and throat, as he said: "I wanted to mention. I have an odd suspicion about the hacker. Could it be, do you think it's possible that it's Kevin?"

Both Becky and Ralph looked surprised.

"No," said Ralph promptly. "I'd suspect Becky here before Kevin. He's a really good kid; also he doesn't know enough to be the hacker. And you said yourself it's probably a minority."

They were interrupted by the waitress bringing food. Between mouthfuls, Martin started in on another track. "Michael has his own plan for making crime impossible. Maybe you've heard it. First he said, 'Do away with money, all money. Crimes involving money won't be possible with no money.' So I asked how people would pay for items they wanted. 'Anything, everything they want is free. Just given to them. No reason to steal anything, because you get things free.' Without any prodding from me he went on to say, 'Each person will work as he is able, on what he does best.' "

"Communism," muttered Ralph. Then more loudly, "And did you ask what he would do about those who won't work?"

"Yes, I asked about slackers. There was no delay in his answer. 'We kill them.' Finally, I asked, 'And who decides which slackers are bad enough that they need killing?' He said firmly, 'Me, I'll decide.' "

Martin turned to Ralph. "I've been thinking about making things impossible. You ought to make back trouble impossible, and near-sightedness. And how about boredom?"

"There are many things we could make impossible," said Ralph. "I have a list in mind that I'll be working on."

"I was just kidding, OK? My little joke."

"Well, I'm not joking. First, I don't want to see death during law enforcement—make it impossible. You know, like the British police, the bobbies in the past—without guns. A police officer with no gun isn't going to kill anyone."

"And what do they use instead of guns?" Martin said. "Sling-

shots?”

Becky set her drink down. “Men always want to fight. We even see it with boys in kindergarten. And when not fighting, they’re analyzing, endlessly. But go ahead, you already told me about your non-lethal weapons.”

“Becky gave the punch line, but that’s the idea: weapons that don’t kill given to law officers. I think they hold great promise, but it’s been hard to get the professionals to use them.”

“Why?” Martin said. “I’d expect them to welcome a way to keep from killing people, even law breakers.”

“They don’t trust new weapons,” Ralph went on. “We’ve had electric shocking devices—tasers and the like—for a long time. The police worry that they’ll get killed while they’re trying to sort out the wires and send a shock to the bad guy. A high-tech weapon they like is the stun bomb. You lob one into a room before going in yourself. After the bomb goes off, people inside are disoriented. Those entering get an extra edge, though they mustn’t delay going in. They also distrust the new pepper spray, and no one wants my sticky bombs.”

“Sticky bombs?” Martin said.

“Yeah,” said Ralph. “Many of these weapons rely on stickiness. They stick a car to the road or make the road so slick the car can’t move. But the bombs just came out. You throw one, and it explodes as a mass of sticky gunk, all over anything nearby. It’s fixed so the gunk doesn’t go too far. Often the person is immobilized. You need a special solvent to get it off—water’s no good. The bad guy will stick to everything he touches. Unfortunately, I got them to use it, and they’re still talking about what a mess it was to deal with the guy afterwards.

“But not just death during law enforcement, I want to make accidents impossible—and make unhealthy lifestyles impossible.”

“This would be hilarious,” Martin said, “if you didn’t sound serious. Becky’s mother was talking earlier about ‘changing people’s lifestyles.’ The two of you’ll have everyone so pre-programmed and controlled they can’t hurt themselves.”

“You don’t listen to me,” Ralph said. “I don’t want to *control*. I don’t want to arrange the world so people feel controlled, or are

subtly controlled. Take accidents, for example.”

“No thanks. I’ll pass,” Martin said.

Ignoring him, Ralph said. “Society has worked hard to create environments and products that don’t hurt people, but there’s much yet to do. Consider the bathroom.” Ralph glared, daring Martin to interrupt. “It’s an accident waiting to happen. Hard, slick floors and tub or shower bottoms, hard protruding metal objects, scalding water on tap. The surfaces you walk on should not be slick. The objects you might fall against should be soft or padded—no burning hot water, either. And don’t forget the water-polluting toilet. The bathroom is a mess. They once were a type of home electric chair, regularly frying people, but we’ve fixed that in new construction with special circuits.

“And picture the typical suburban or urban environment, where children play in the streets and get hit by cars. Our master plan for this town calls for clustered houses connected by pathways to local parks where children can play. I’d like to promote more biking and walking, less driving. I have a dozen other proposals like these, all designed to prevent accidents, improve lives.”

“And unhealthy lifestyles?” Martin grabbed Becky’s coke, held it up. “This drink isn’t healthy. No nutritional value. Ban it.”

“You should talk,” said Becky. “Look at you two—you’re guzzling alcohol.”

Martin used his most pompous, academic tone. “Medical studies show that one or two drinks a day decrease the incidence of heart disease. But only for men.”

“Whose studies?” she said. “Sounds like male-sponsored research to me. And *you*.” She pointed to Ralph. “Mister sits-in-front-of-a-video-screen-all-day. You should talk about unhealthy lifestyles.”

“I exercise. I go skiing. And not the sissy downhill skiing. Cross country.”

“You go twice a year,” she said. “You need *regular* exercise.”

“Anyway, back to unhealthy lifestyles.” Martin handed Becky her coke and turned to Ralph. “You’ll follow people around, yanking fried food out of their hands, force-feeding them fresh vegetables?”

“You keep forgetting,” said Ralph, “that I’m serious. No, I won’t

force anything on adults. But I do want to encourage them—help them achieve a healthy lifestyle. I had eight aunts and uncles who all smoked, and they're dead, every one, from their smoking, from diseases related to smoking. I would discourage smoking, but I'd also decriminalize the less-dangerous drugs. You know, marijuana never directly killed anybody, unlike cigarettes, though of course a stoned driver might kill or be killed. Many of these people who are set on making all drug use illegal are big users themselves of alcohol, or caffeine, or nicotine, or even prescription drugs.

“My auto mechanic has computerized record-keeping,” Ralph continued, “with complete data about my car. I get reminder notes when the car needs service, and when I take it in, he knows exactly what to do: ‘Let’s see, it’s been ten thousand miles. You need an oil change for sure and . . . blah, blah.’ ”

“They just use reminders to suck money out of you,” Martin interrupted.

“Oh, maybe some mechanics remind for profit, but mainly it’s good, and you can always decide for yourself—take your car elsewhere or ignore the reminder. Anyway, we should do the same for people—complete records coordinated with reminders and incentives, even monetary incentives, insurance incentives. Most people can use a bit of a push now and then. My relatives sure could have.”

“So you’ll interfere with their lives,” Martin said.

“Damned right! Excuse me, Becky. A bit of interference. Constructive interference. Other places do it already—but not a good job, not coordinated, not thorough. I want to reach out a helping hand to everyone, the young and the old, those with emotional problems, too.”

“And if they don’t want help?” Martin asked.

“The reminders, the offers, the incentives will be there, year after year. And the records, so when they really need help and ask for it or permit it, we can be effective.”

As if in perfect synchronization, to punctuate Ralph’s last remark, the lights in the restaurant flickered, then failed completely. After a brief time, conversations started up more loudly, while the restaurant manager and help brought candles to the tables. Ralph looked outside

and found no lights, no power within view.

“He did it,” Ralph said distractedly. “It was the hacker. He managed to knock out the power grid, maybe by crashing their computers.”

Ralph was dancing with impatience, so they quickly finished their food and headed for their two cars. Becky convinced them that she would get home fine even with the power outage. Ralph had checked that the phones were still working in the restaurant, so he headed home with Martin.

“I have one of those uninterruptable power supplies,” Ralph said, “so I should still be able to get on-line. Maybe I can tell what’s happened.”

Soon after they reached Ralph’s house, the power came back, and right away the phone rang. One of Ralph’s technicians advised Ralph to check his answering machine message. Sure enough, it was a tirade against surveillance technology and further warnings that the deadline had passed.

“He broke in and changed my phone’s message.”

“Well,” said Martin, “not much of a trick to do that. I’ll bet your phone is ‘protected’ by a two-digit code. Fifty calls on the average and he’s broken it.”

“It’s pretty clear anyway that the power failure was this hacker; my altered message was his signature.”

11. Catch a Hacker

Tuesday morning, April 7

A day and a half after the power outage, Martin wandered into the kitchen, where Ralph was eating a doughnut and reading the paper.

“I had a weird dream last night,” Martin said.

“Martin, you know I’m not a psychiatrist.”

“Come on, listen.” Martin looked around for food. Doughnuts, that was all there was. “I was teaching college classes again, but with a twist. I had a *mobile* office that I *drove* to the classroom.”

“You mean drove down the hallways, like a golf cart?”

“No, no. It was self-contained—more like a bookmobile. I drove it around outside, through this strange desert landscape, swerving around tall cactuses, over small hills and through sandy gullies. I drove halfway around the campus to the proper door, where I plugged my office into the classroom like the people-mover bus at Dallas Airport. There was hidden machinery that assembled the classroom itself, the right size for that class and with the right equipment. In the dream I didn’t know how the students got to the class.”

“You’re a sick man,” Ralph said.

“There’s more. Just before class I’d made up visual aids for my lecture—multi-colored 3-dimensional constructions designed by me and spit out of an odd machine, as a picture would come out of a laser printer, only these were solid. I finished the lecture, and drove to the departmental office to pick up my mail—a high-tech dream, and I’m still getting snail-mail. Then I drove off to a meeting with other faculty.”

“Well,” said Ralph. “Your subconscious is telling you something.”

“Ah, psycho-babble. You just admitted you’re no psychiatrist.”

“I’m serious,” said Ralph. “You were just doing physically what we’ll all be doing better and easier electronically. You want to meet with students in a classroom? But you also want the resources of an office right there? You and each student will create a virtual classroom, with you all together, interacting. You want visual aids—a rock, or an airplane, or Hoover dam? We already have crude 3-d constructors like the one you described, but who wants a physical object when you can fetch a virtual copy into the classroom. You can all take an excursion to North Africa to check out the pyramids. You can have any kind of learning environment you want. Eventually it will be crazy to spend millions of dollars and years of time building fixed structures for education. We’ll ‘build’ whatever we want in next to no time.”

“You’re reading quite a bit into a dream that probably started with the extra onions on last night’s burger.”

“Enough of that,” said Ralph, more seriously now. “Look at the story in this morning’s newspaper.”

The article reported on Sunday night’s electric power failure, which lasted thirty-one minutes over an extended region containing the town. The story quoted a power company spokesman as suggesting that someone might have deliberately crashed the computer controlling local power distribution. The article closed with the mention of “yet another computer problem affecting the town.”

“The publisher, that louse Hoffmann, wants to blame me personally for everything that goes wrong,” groused Ralph. “But anyway, Martin, we’ve got to take action. The hacker gave his noon Sunday deadline, and I’m sure he followed through with the power failure. Each success will just lead him to a new, more-dangerous step. Soon we’ll need to tell the local authorities about our suspicions. What if there’s another attack? Other industries should protect themselves. Have you made any headway with the logged data or with your snooper?”

“I have a theory,” said Martin. “But I’ll need more time today, preferably at your office so I can poke around in your backup tapes, even ones from months ago. Give me just one more day.”

As they drove into town, Martin explained that the hacker had

deleted entries in several log files dating from a week ago, after he crashed the health records database. He couldn't know that Martin's snooper computer was keeping its own log file, and in some cases the backed-up log files also still contained deleted entries. Unfortunately, there had been no further leaked health information. Martin said that instead he was analyzing all computer usage data over the past several months. "A bit more filtering and comparison today, and I think I'll have results to show you," Martin said as they walked up the steps into the city building.

Ralph had pushed aside books on the floor of his office—it looked like he'd used a shovel—to make room for a small desk, with a computer on it, where Martin could work.

Martin was certain he knew the hacker's identity now, but he needed evidence to convince Ralph, and maybe to convince others. As with many amateur detectives, Martin was later to find that he'd uncovered only part of the truth.

He soon lost himself in files of data and comparisons between access times. He was using a hand-drawn time line chart to keep track of events and dates. The work was feasible because he was only gathering data in support of a specific hypothesis; he had long since discarded the bulk of the logged data as irrelevant. By late morning Martin was ready with his charts and diagrams and conclusions for a presentation to Ralph.

Ralph had often been on the phone and often out of the office. Martin waited through another call and indicated that he wanted to show his data.

Martin felt nervous when he started, as if from too much caffeine. "The hacker initially got in through a regular account, nearly three months ago. These early accesses are in the log files, but later he deleted logged entries." Pointing to entries as he continued, Martin explained that a professional would have deleted each log entry immediately, but the hacker waited, sometimes leaving a discrepancy between the backup tapes and the on-line entries.

"Since I arrived, I have my own log entries, and they show further discrepancies. These are like flares on a runway, guiding me to this hacker, since only he was deleting entries."

Ralph was having trouble restraining himself. “Get to the meat—tell me who it is.”

“All in good time,” Martin said. “After I modified your network and secured the machines, the hacker got on again immediately. That really bothered me. The log entries show him logging on as ‘root,’ with all privileges. He didn’t enter through some backdoor; he knew the root password. Then after we changed the passwords, he hasn’t been on at all. For me, this was decisive.”

“Martin, you’re driving me crazy.” Ralph was wringing his hands.

“Let’s go back and look at the original accesses. The hacker shouldn’t have belatedly deleted their log entries—his biggest mistake, calling them to my attention. They represent a usage anomaly: a user accessing the system all day, and then the same user on the system for three and four hours at night. Here’s the username; you’ve surely guessed it.” Martin showed Ralph the entry “spierce.”

“Susan!” exclaimed Ralph. “You’re back to Kevin as the hacker. We already went over that. It’s not Kevin. He wouldn’t do it. And he couldn’t—he doesn’t know enough.”

“He did, he does,” said Martin calmly. “I’ll go over all the entries if you like—do you really think Susan used the system for hours on two successive nights, in the middle of the night? But for right now just recall the Sunday afternoon a little over a week ago, when Kevin and Michael came to play computer games. I let them watch as I worked on the network. I typed the root password right in front of Kevin. Real smart. You were using “susan-p” as password—a bad choice, by the way—and Kevin could tell what I typed. Maybe he had to try a few guesses where the hyphen is. After we changed the password and I disabled a few utilities, he was locked out again.”

“Kevin!” said Ralph, with clear anguish. He got up and paced the path to the door and back. “Oh, Christ! What am I going to do?”

It was evidently a rhetorical question. “If it was just the hacking,” Ralph continued, sounding distracted and stressed. “But knocking out the power, that’s really serious. Didn’t he know?” Ralph paused for a long while, not a sound in the room. “There were conflicts, resentments, but I thought we were doing better. I never dreamed he had all this anger and hostility bottled up. I don’t know what to do.”

Another pause. “He’ll finish his classes early this afternoon and then should be over at the Landon middle school. I’m going to talk with him there.”

“Don’t do anything hasty,” Martin said quietly. “That’s basic Ethics 101: gather data, get the facts straight, consider alternative actions—then proceed. And what will you do if he denies everything?”

“It’s not his style to deny this when confronted; I give him that credit. He never directly lies—one of his strong points. Martin, I’m ... irritated. The past four years I’ve gone out of my way for Kevin. I taught him much of what he knows about computers. And I don’t like his e-mail mention of Patrick Hoffmann. Hoffmann may have put him up to this.”

“What’s the deal with Hoffmann,” Martin asked. “Is there something special about Kevin and Hoffmann?”

“Oh, sort of,” Ralph said, still distracted. “It’s ... complicated. I’ll tell you about it later—sometime. I’m going to leave now. Slam the door shut as you go. Do you want a ride home?”

Martin replied that he would grab lunch and walk home, only about twenty minutes of walking.

After Ralph left, Martin sat thinking. From the start he’d thought Kevin looked like Hoffmann. Could Kevin be Hoffmann’s son? That didn’t seem to make much sense. Hoffmann was so old, and paternity was easy to establish now. They wouldn’t let a wealthy person avoid his responsibilities.

Martin pushed these thoughts aside and began admitting to himself how worried he was about Kevin. What would happen to the boy? Ralph was so hard-line and uncompromising—almost the opposite of what Kevin needed. Martin thought how much he and Kevin were alike—except that Kevin was the precocious one. Martin wondered where his own loyalties lay. He’d never before experienced such mixed feelings—sympathy for a hacker so similar to a young version of himself, opposition to all the prying electronic eyes in this town, dismay at the crime of a crashed electric power grid.

The longer Martin waited, the more agitated he became. The Phillips family, especially Becky and Joseph, knew Kevin well. Mar-

tin decided he should call Father Joseph. Joseph answered right away—as Becky had said, always on call. Martin told him everything, all the details. Joseph was concerned, as one would expect, and he knew all about Kevin’s problems with Ralph. Weren’t there any secrets in this town? It seemed that Ralph had understated Kevin’s resentment—particularly his resentment of a relationship between Ralph and his mother.

Martin promoted the idea of community service for Kevin—maybe they could let Kevin spend time in a police car or at the hospital. “Let him see the town’s real problems,” Martin said. “At the end he writes an essay, like a term paper, giving his views—what should be done, how this society should change.”

Joseph wasn’t overly optimistic. It would be up to law enforcement, up to the legal system. He thought that Becky was also at the Landon school and promised to call her. “Perhaps she can mediate between Ralph and Kevin.”

Martin walked back to Ralph’s place with hot afternoon sun beating on his back. Ralph still wasn’t locking his house—an affectation, it seemed to Martin, proclaiming the town’s lack of crime. Martin dropped into a chair to think. It was all over, wasn’t it? He’d found Ralph’s hacker. But he had a sick sense of foreboding that there was always an aftermath, consequences to sort out.

Ralph was gone all afternoon. Finally he called to give Martin an update. He’d talked at length with Kevin, more briefly with Becky, and then at Joseph’s house with Joseph and his family.

“At least Kevin admitted it,” Ralph said on the phone. “As I expected. He never lies. But I had a . . . hard time this afternoon. Kevin is unrepentant—and more openly hostile to me personally than before, if that’s possible. But there’s . . . more. Kevin didn’t act alone, the way we’d thought; he had a partner.”

“Ah,” said Martin. “Your nemesis, Patrick Hoffmann, was involved. You expected him behind this all along.”

“No—well, Hoffmann might have made suggestions—Kevin acknowledged talking with him, but it’s worse than that. Michael, Michael Phillips, Becky’s brother, was Kevin’s partner in all this. I find it hard to believe.”

“Oh, I can believe it,” Martin replied quickly. “I can see how it might be true. Michael likes to follow Kevin around. It would be just another exciting activity, like watching Kevin play an elaborate computer game.”

“We might be able to sell it that way to the courts. In fact, that’s the story Kevin wants to go with, that Michael just watched him a few times. Or if possible, Kevin would like to keep Michael out of the story altogether. Kevin really feels sorry about Michael’s involvement. But I talked with Michael a long while this afternoon. True, Michael lacks much of Kevin’s ideology. While he believes in Kevin’s viewpoint, the whole business was a lark for Michael, a diversion. Still, Michael was the one who suggested knocking out the power grid, after finding directions in that ‘Destroy the World’ book. Kevin managed to hack into the electric company’s computers, but then they just followed the book’s recipe, steps one, two, three, and darkness on the face of the earth. The people who wrote that book should bear part of the responsibility.”

Ralph went on to say that he’d talked with Joseph and Margaret. She was especially upset, and they hadn’t decided what to do. “The boys will be in the juvenile court system, and Michael is only eleven. I think we should let both boys face whatever consequences fall out over this; it may already be too late to take a different course. And Martin, why have *you* been so involved in all this? Kevin’s just a criminal, after all.”

“He’s underage, and he’s not *just* a criminal. Of course you know that.”

“Yeah, I should say not.” Ralph sounded more upset on the phone. “He’s ideologically motivated. I had no idea. That’s scarier than an ordinary criminal. What’s to become of him? At worst it’s a personality disorder, like a borderline personality. Not a psychosis, but not curable either, in his own fixation area.”

“Spare me the psychological doublespeak. Kevin’s no borderline personality, whatever that might mean. I have reasons for wanting to help him—hard to explain to you. I was Kevin’s duplicate eight or nine years ago, but I was lucky, and maybe I didn’t have Kevin’s strong beliefs. I hate to see a young and talented person get into

trouble.”

“Well, maybe you should talk with him. He doesn’t seem mad at *you*, maybe just curious as to how you caught him.”

“And now there’s Michael to worry about, too,” Martin reminded.

Sounding tired, Ralph said that he, Susan, Joseph, and Margaret were going to have an executive session and make a decision.



Hours later Martin was still at the house and thinking of sleep when Ralph came in with Kevin. He and Ralph were arguing.

“... disappointed in you,” Ralph was saying. “How could you do this? How could you do this to *me*? To *Michael*?”

Martin thought perhaps he should quietly leave, but he felt a compulsion to stay, to intervene if necessary. Martin was aware of his trait to want to help, to interfere, to give advice, but he had to stay and listen. The other two paid no attention to him.

“What bullshit!” Kevin said. “You’re screwing up the *world* with your machines, and you give me this crap about ‘disappointment.’ Listen to this—I know it by heart: ‘The Industrial Revolution and its consequences have been a disaster for the human race. They have destabilized society, have made life unfulfilling, have subjected human beings to indignities, have led to widespread psychological and physical suffering, and have inflicted severe damage on the natural world.’ ”

“That’s the Unabomber,” said Ralph. “A psychotic serial killer; thank goodness he’s no longer loose. That’s going to be your source of inspiration and wisdom? You commit crimes and start quoting a maniac about the Industrial Revolution.” Martin thought he could hear Ralph actually grinding his teeth.

“Here’s another quote, then.” Kevin pulled out a sheet of paper. “I don’t have this one memorized.” Kevin read on in a shaky voice. “ ‘But now the machine era is coming to a rapid close. It has fouled the air, poisoned our waters, killed our rain forests, torn holes in the ozone layer, destroyed our soil and the art of family farming, rendered our young violent and self-destructive, dried up our souls, and sent

adults wandering for meaning, bewildered and soulless.’ Later it goes on: ‘The machine era has also managed to bankrupt itself. We cannot afford industrialism any more.’ ”

“More of the Unabomber,” Ralph said, “though I admit those are real problems. Of course I don’t like such consequences of industrialization. Nobody does. They’re partly a result of things out of control. I want to restore a measure of control.”

“It’s not the Unabomber. That was Matthew Fox, a Catholic *priest*. A theologian.”

“So you quote people I’ve never heard of. What else does this guy Fox say? I’ll take a chance here; I’ll go out on a limb. I’ll bet this *priest* Fox doesn’t suggest killing people, doesn’t propose to destroy civilization like the Unabomber advocated. I’ll bet Fox wants to *replace* industrial society with something better, or wants to *refine* it. That’s what I want, too.”

Kevin wasn’t going to give a finger’s width. “Fox wants what the Unabomber wanted: a return to nature, a renewed respect for nature. In a crisis you need extreme measures to get attention. The Unabomber killed maybe three people. Two thousand civilians per *month* are killed by land mines left around from wars. At least two hundred *million* people died over the past twenty years who should have lived—overpopulation.”

“This is ridiculous. You make no sense. How many people was it acceptable for the Unabomber to kill? You can’t solve problems by killing people, any more than by causing a power failure.”

“You talked about community service. Send me to jail instead. ‘Under a government which imprisons any unjustly, the true place for a just man is also a prison.’ Who said that? I’ll bet you don’t know.”

“I’m tired of your quotes. Who cares who said it. We’re not imprisoning anyone unjustly.”

“How little you know. You probably believe what the newspapers say. The ‘free’ world has always had political prisoners. Like Alan Turing.”

“Turing?” said Ralph. “Oh, yeah, your handle. What about him?”

“He was crucial in helping the English in World War Two. And

they paid him back by convicting him as a homosexual, using England's horrible anti-gay laws. He killed himself after he was sentenced to 'chemical castration,' whatever that is—it sounds nasty as hell. The greatest computer scientist ever—they push him to suicide.

"And my quote?" Kevin continued. "I knew you wouldn't recognize it. You guys always talk about 'Walden Two' and 'Walden Three.' What about 'Walden'? Thoreau's 'Walden,' his book, and his other writings. I'll bet you haven't read any."

"I read 'Walden' in college. He went and lived beside his pond. Lived by himself, like the Unabomber, but only for two years."

"You're frozen in your own way of thinking, your love affair with these machines. No room for new ideas. You ought to read Thoreau again—and Fox, and others. Load new information into your brain. Realize that computers and machines are never going to solve our problems. The computers just let us screw up the world more quickly, more efficiently."

"The sad thing is," Ralph said, "there's nothing new in what *you're* saying. The world has always seen anti-technologists. The Luddites in England wanted to throw away all technology. So you and the Unabomber will return to basic nature. What do you really know about 'nature'? At least Thoreau lived out in the woods. You've hardly ever gone camping. Your idea of fun is to be glued to the front of a monitor. Fine—rave on about a return to nature, abandon technology. Wait until you have something as simple, as trivial, as a toothache, say, a *bad* toothache. Your tooth will take over your life, drive you crazy, and you'll have sent the dentists packing. What kind of population level do you think the world could support without technology? What creature comforts? What quality of life?"

"Things will collapse sooner or later anyway. Better sooner than later. For a short time, you and your like, the white, Christian males in power, you who've always been in charge, will keep your control, that's all. The world is changing to something undreamed of by you, a multitude of lifestyles and beliefs, of practices and possibilities that you don't want to understand, that you see as threats. It's useless talking with you, you stupid old man. I know nothing will change your mind."

Ralph stood over him with clenched fists. “You worthless little criminal. I ought to . . .”

“Yeah, beat me up,” Kevin interrupted. “That would make sense.”

Martin couldn’t stand it any more. He walked over next to them. “Stop it. Stop it, both of you. Let’s have respect for each other. You’re neither one listening. Kevin, messing with computers, knocking out power, is completely unacceptable. What if someone had been hurt because of the power outage? And we haven’t mentioned your worst activity—I’ll go ahead and say it—involving an eleven-year-old in all this. We can’t tolerate behavior like that, but you, Ralph, should listen to him, hear what he’s saying.”

Martin’s voice nearly cracked. “I’ll be honest—I’ll admit to you both—I’m enamored with this technology, these computers and the devices attached to them. But I know, I *know* the final answer involves much more. And I *hate* what is happening to our world. I’m not optimistic about our future, facing overpopulation, environment degradation, terrorism, and all the rest, as we are. You, Ralph, would just keep adding gadgets, looking for technological solutions. And you, Kevin, would substitute chaos, the absence of technology and control. We no longer live in an underpopulated frontier land, the Wild West. And people love to romanticize those older, more primitive times. The ‘Cowboy and Indian’ era contained terrible injustices. Abandoning technology and control, that won’t get us through the next fifty years—it will all fall apart, unimaginably horrible conditions. There are too many people now, too dependent on technology.”

Martin pointed to Ralph. “Admit it, the technology’s not the final answer.”

“Of course not,” said Ralph more quietly. “I know that. But it will help.”

Martin ignored the last and turned to Kevin. “Don’t you see what you are? You have a conscience, and you feel pushed into a corner by technology. You use technology to undermine technology. You even use anonymous services. You *like* these computers.”

“Sure, I like them,” Kevin said, also quieter. “They’re seductive. And I see the irony here. So what?”

“Kevin,” Martin said reasonably, “the computers can help us get

to the world you want, with respect for nature, a world in balance. We won't get there now without technology. It's never possible to go back, only forward. We can't become native Americans, living off the land. And Ralph is right—you'd hate such a life. The computers are not the problem. *People* are the problem: greedy people, ignorant people, people deceiving themselves, lazy people ignoring problems."

Martin pointed to Kevin, surprised at himself. "I want to talk about all that matters here and now: It's time for strong decisions, for a change in your life, in your approach to life. Instead of attacking computers, or attacking a computerized society, instead of focusing hatred on technology, on Ralph, you need to focus on the real problems. Maybe you could make a difference."

12. To Stay or Not

Wednesday evening, April 8

At 8 pm Martin entered Ralph's house in good spirits considering how stressful that morning and the previous Tuesday evening had been. Kevin was still hostile, but he had given a reasonable and accurate-sounding report to the police. Michael's report was what one would expect from an eleven-year-old: at times whimsical and humorous, while obviously a sobering experience for him—computer games weren't supposed to end this way. The boys had been assigned a hearing date with Judge Patterson, an older local jurist with what Ralph said was a reputation for fairness and restraint. Even Michael's mother, Margaret Phillips, the nervous one in their group, was no longer so upset—partly the work of Becky's calming influence.

Martin walked back to his bedroom carrying two books Becky had lent him. He hadn't heard of the priest Kevin had quoted, Matthew Fox, but Becky had promised to show Martin one of Fox's recent books. She'd come up with "The Reinvention of Work."

"An interesting book, not what you'd expect from the title," she had said. "Fox is ... well, not liberal—he doesn't like that term—he'd rather be called radical. The Catholics kicked him out of his order, and now he's one of 'us,' an Episcopal priest, but still controversial."

She had also brought Martin her copy of "Walden," which Martin had glanced at with a real start: It was edited by Joseph Wood Krutch. Maybe that explained why Krutch hated Skinner, Martin decided. Krutch must be some big Thoreau scholar.

Martin's thoughts were interrupted by Ralph rapping on the open bedroom door. "If you're not busy, I want to talk seriously with you."

"Let me get a couch and smelling salts."

Ralph led the way to the living room and gestured toward chairs. "I'll come right out with it," said Ralph. "I want you to work for us, as our Security Administrator—we obviously need one. And to do other programming. You should be able to continue your consulting, so it wouldn't be such a change. I can be liberal about leaves of absence, for you to visit companies you work with, for your seminars. You telecommute much of the time anyway."

As usual Ralph wouldn't let Martin interrupt. "This town is an exciting experiment, finding solutions to social problems. You want less surveillance, more of the illusion of freedom. Fine. Come work here and you can influence the outcome. The pay won't be so great, but this is a good place to live, a good place to survive into the next century."

"If you're that worried, if it all truly falls apart, no place will be safe, except maybe New Zealand, or a small Pacific Island."

Ralph shook his head, more serious now. "You're sounding like Kevin. But if the worst comes, we might make it right here. Several of us in the town's government are working on contingency plans for a societal breakdown, or for other extreme problems. This city has good natural barriers, and we have a local food supply. I've been thinking about this a lot lately, but I have to be careful. Some of our citizens would go crazy if they caught us planning for an apocalypse. I just see it as having plans in place for good times and bad."

"What would you use for weapons, if it came to that?"

"We would never stand up against a well-equipped military group; I'm only planning for a partial collapse, to deal with armed transients and refugees. But anyway, what do you think? I mean about working here. Are you interested?"

"I'll answer if you get me coffee." After Ralph poured a cup and brought it to him, he said. "I don't know." Ralph started a mock scream, but Martin went on, "Hold it. I've thought about this, but I'm worried about getting bored—no stimulation. OK, you have a poetry reading group, but how often does the town put on a play?"

"Once a week," said Ralph promptly. "More often in the summer. Of course just amateur productions. But Skinner himself brought up the issue of boredom. After he wrote 'Walden Two,' people wanted

to found actual Walden Two communities. I read an article about several. An interviewer asked Skinner whether he thought he'd like to live in one. It sounded a bit mealy-mouthed—he invents such a society but doesn't personally want to live there. Lack of stimulation was his excuse. He worried that there would be no one in his field, no one to converse with. Also Skinner's wife was even less inclined to enjoy such an environment."

Martin gestured with the coffee cup, almost spilling it. "That's the problem exactly. It's fun to visit your town for awhile, but in the longer term, what would I do for bookstores, for libraries. I'm used to a big city."

"Don't you see," said Ralph, "the world is changing. We are living in a global village; it's not just an aphorism. The networks now in place and future ones will change everything. Skinner wrote letters by hand; he was never a computer user. He never thought about real-time video links, about multimedia, about conferences or performances by remote individuals. You want to watch a play? You will *perform* in a virtual play, with the actors and audience scattered across the globe. I tell you, isolation is disappearing as a problem. Tell the truth—don't many of your friends keep in contact with you over the Internet?"

"Yes, but what about good bagels for breakfast, and watching a big city wake up in the morning."

"Let's go out for an evening walk. We'll have the town itself as a background."

Hundreds of fireflies were flashing like neon signs. Martin hadn't seen fireflies since grade school. A few blocks of walking and Ralph started again. "I admit, you can't get everything here. No bagels, except frozen ones, or you can get fresh about sixty miles south. A town like this might appeal to you more if you were ready to settle down, a family and all that."

"More matchmaking."

"Maybe having a girlfriend would be an attraction, and there is no large pool of suitable future spouses for you here, that's true—a smaller number of possibilities, though all you need is one. My point is that big cities are better for bachelors, while smaller towns fit a

simpler lifestyle.”

“You should talk,” Martin said. “Mister eligible bachelor.”

“I’m working on it. But stick to the subject. *You* are the subject. I’ve got a final reason you should stay. In Skinner’s *Walden Two* the main character decides to join their community at the end. Do you want to screw the story up here with a different ending?”

The main character of a story. Martin felt weird, dizzy. Who was he? Where had he come from? Was he a character in a story? Would he become one? Reality cracked open—he saw past and future spread at his feet. Ralph’s and Becky’s personalities melted into his—Martin the rational part, Ralph the practical, and Becky the intuitive, that mysterious part. He had a god’s powers—a 4-dimensional view of space and time. He could reach out to change the past, to correct mistakes. He could make any future happen. He saw himself in endless futures doing amazing things. But this way was cheating, not playing by the rules. He took a deep breath, closed his eyes, tried to imagine *Walden Three* again.

Ralph was talking. “. . . what’s the matter? Are you ill?”

“I felt strange.” There was a park bench nearby to sit on. “I’m all right. Just let me sit for a second.”

After Martin recovered a bit, he said, “I’ll think about it, sleep on it.”

When they got back, Ralph had a phone message from Bob Laherty, the source of the town’s ‘*Walden Three*’ nickname so irritating to Ralph. When Ralph returned the call, he found that Laherty wanted to talk—insisted on coming over. Ralph tried to beg off, but he found it difficult to say no to anyone.

“I’ll record this just in case,” said Ralph. “And I want you to stay, as a witness. I don’t trust him.”

“Why not blast him with a shotgun as he gets to the door?” Martin said while Ralph paced around, straightening up and grumbling. Martin added, “And who’s going to run the video camera?”

Ralph pointed to his pocket. “Just a mini-recorder, audio only.”

Martin had trouble adjusting to the short delay needed to go from one place to another in the town; Laherty knocked on the door just as Ralph started the recorder. Ralph shook his hand and introduced him

to Martin.

Laherty didn't look or sound like Martin had expected. In a display of his worst prejudices, Martin had anticipated a short, red-faced farmer, with a thick regional accent. Instead Laherty towered above them, though he was thin, and he hurt Martin's hand with his handshake—a smooth grip by someone who doesn't realize how strong he is.

Laherty turned to Ralph. "I'll get to the point. I talked with Kevin for several hours this afternoon. He's upset, of course. I know his perspective, and now I want yours."

"How much did Kevin tell you?" Ralph glared at him. "He's the one that's been leaking the health data. Do you know that? And he caused the power outage last Sunday evening; he's not denying that. You have obviously influenced him to act as he did."

"I've often talked with him, but until this afternoon I truly didn't know he had done anything wrong. In fact, believe me, I was shocked. But it's done now, and I'm not even sure it was illegal. You and others are pushing him around, talking about jail or community service, while he hasn't consulted a lawyer. He needs somebody on his side."

Ralph was getting red in the face. "You take quite an interest in this boy. But he's not the only one involved—Father Joseph Phillips's boy Michael also participated. The Phillips family and Susan and I decided that the boys should just own up to what they'd done. I admit that Kevin might have avoided charges altogether with a smart lawyer. The issues are technical, and we had only circumstantial evidence until their statements to the police. But unlike me, you know almost nothing about Kevin. I'm not sure you have his best interests in mind."

"You're patronizing me," Laherty said. "I know all about him and his difficulties growing up with a single mother. I know about the stress of his relationship with you. He's remarkably intelligent, but isolated in this town—at his high school, with his peers. I've been working with him on and off for nearly a year—part of my ministry. And you dare to say I don't have his best interests at heart."

Martin decided to dip his own paddle into the water. "Lets cool down. It sounds like we all want what's best for Kevin." In as rea-

sonable a voice as he could muster, Martin continued. “And that’s where this is all headed. Who else should decide what to do except the parents involved?”

“I’ll tell you, I do trust Joseph,” Laherty said. “He’s a good man; he’s sincere. Kevin mentioned him last night, and that’s part of the reason I’m here talking with you and not filing legal papers through my lawyer. Kevin thinks the idea of community service is ridiculous, an insult, but I feel it does have merit. You need me, though. *I*’m the one who could talk Kevin into a compromise. Kevin probably told you that he’d rather go to jail.”

“He mentioned his preference for jail,” Ralph said. “He sounds crazy when he’s in this mood. And you’re encouraging him, abetting him, making him worse. I suspect he got many of his ideas from you. He was quoting the Unabomber and someone named Fox.”

“I need to talk with Kevin again if he’s quoting those two together. The Unabomber is crazy, but I’m a fan of Matthew Fox, and I’ve told Kevin about him.”

Laherty motioned to chairs. “We should sit down. I didn’t encourage him to do this hacking, or to do anything illegal—especially not cutting off electric power. I want open, verbal opposition. But Kevin’s ideas aren’t crazy—just at variance with yours. You, like most of society, use a high level of technology, without any comparable level of spiritualism. Your approach has no spiritual side.”

“I have a spiritual side. But what about your ideas?—loaded down with worn-out, contradictory assumptions, like free will and supernatural authority.”

“Ralph!” Martin was appalled. “Don’t pick a fight.”

“It’s all right.” Laherty looked at ease, not like anyone with a need to fight. “I make those assumptions, but they’re not contradictory. I know what you think I am: a Bible-thumping zealot. They call me a fundamentalist, but I don’t know what that means. I do believe in free will, and I do believe in supernatural authority.” He gestured as if to include the town. “Out there, they think I believe the world is flat—that I’m against all technology and believe every word, literally, of the Bible, that I’ve never read anything else. I’m more sophisticated than that. Ralph, I wonder if you and your cohorts know what you’re

doing, know the implications.”

Ralph had a prompt reply ready. “We do. We’re using computer technology to improve security, to make the town safer, make it run better. And we’re improving people’s access to information, providing guarantees of their privacy. I feel good about the work we’re doing.”

“You know,” Laherty said to Ralph, “I’ve followed your work for several years now. There’s no question in my mind—you’re a man of personal honesty and integrity. Part of me respects that, and part finds it sad to see intelligent individuals so naive and trusting. You’ve created your surveillance systems, with their vast capabilities. And of course the controls are in the hands of people. No amount of system security can negate this environment, the one governing the machines themselves. You see, you are concentrating power in the hands of those who run and control the control system. This leads to corruption—it justifies the fear of control. Your system requires incorruptible humans to run it; humans aren’t like that.”

Ralph broke in. “W[e do, w]e will provide open information to the public about the controls, the machines, the surveillance systems. Citizens’ committees determine policy. I’m not offering a guarantee against misuse, but complete audits of past activity will always leave those in control accountable.”

“Ah, you’re not offering guarantees,” Laherty countered. “I *guarantee* that your system will be abused, used for private and inappropriate ends.” He held up his hand to keep talking. “I do trust you, but what about your co-workers, your successors? What if a bad person gets control of the controls? You may never have seen a truly evil individual, but I have—they’re out there, waiting to take over your surveillance mechanisms.” Laherty gave Ralph an odd sideways look. “I heard a rumor—a week ago—about a blimp the police were using, supposedly for surveillance. Do you know anything about that?”

“I can’t comment on police equipment,” Ralph said carefully.

“It’s true, then. I thought as much. The rumor said Hoffmann had helped them buy the blimp and that *you* killed the project. Good for you. But that shows what can happen, what *will* happen.”

“There’ll be isolated incidents of abuse—a few major occur-

rences of surveillance misuse in the whole country. Indeed. But that's all. In time, we will close all the loopholes, prevent any subversion of the controls. And as I said already, a later audit will always show up the abuse."

"Did you know that Pat Hoffmann is planning to run for mayor?" asked Laherty.

Ralph looked startled. "He wouldn't get elected. And if elected, he wouldn't have much influence on affairs in the town."

"Wrong on both counts," Laherty said. "With his money to help, he may very well get elected, and he's exactly the kind of person I have in mind who would misuse your mechanisms."

"I thought you were Hoffmann's buddy. And he's opposed to all our surveillance technology."

"Publishing a column in Hoffmann's newspaper doesn't make me his good friend. I know what he is: an evil old man—given the proper circumstances, a violent, dangerous man. You think of Hoffmann as anti-technology, but he's nothing if not adaptable. I expect he would find your technological innovations useful."

Martin wondered to himself if every town, every organization, had these people, like Hoffmann, waiting in the wings, waiting to take over. Not the foolish and ignorant, but intelligent, motivated, talented people who were prepared to misuse technology. That was the final flaw with Skinner's depiction of a Walden Two community: no true internal threats, no one on the inside willing to subvert and destroy their society.

"I get frustrated talking with you," Laherty continued. "You mean well, but you've been seduced by computer gadgets. These machines don't *solve* problems; they may patch up problems short-term, and they always create long-term problems. The machines aren't evil in themselves, but the people who use them can be evil.

"I've got to leave now." Laherty stood up to go. "I'll talk with Kevin. I think I can get him to go along with the judgment of the court, and not request a jail sentence. He has to stop this interference and concentrate on open, legal methods. But count on it: I'll not let up until you've taken down your cameras."

"I'm frustrated too," Ralph said. "Don't you see, the cameras

only show an image that anyone could see for themselves—public activities. A individual could always follow you around in public.”

“Bah, sophistry. You’ve got infrared cameras, and facial recognition software. Eventually you’ll be in a position to do a better job following people than an army of private investigators could—the capacity for total control. And then it will be misused.

“I’m amazed at surveillance people like you,” Laherty added. “Don’t you have higher goals? Goals more important than watching what others do?”

“I’m no ‘surveillance’ person,” said Ralph with heat. “And I *have* other goals. We can’t get to any goals if we lose control of society. You’re worried about abuses of power by those in control. Well, I’m worried about abuses, too: child abuse, spouse abuse, abuses committed by criminals, and drunks, and other addicts. You’re concerned with the criminals, while I look to their victims.”

Martin could give Laherty credit, he really wasn’t trying to pick a fight as he said, “You see, we agree very well after all as to goals and what’s important. I just don’t believe in your solution. And you’re right—I *am* concerned with criminals. They don’t need judgment and punishment, but love and forgiveness. There’s only one true solution: they should be born again.”

“I see,” said Ralph. “Unless they’re born-again Christians there’s no hope for them.”

“Absolutely wrong. There is hope for each person—even for those who never hear of Christ. God’s grace is everywhere in the world, just hard to discern—the smallest seed of repentance placed in a man, and it grows into a tall plant that will change his life.

“I want to talk with you at greater length,” Laherty went on more briskly. “To see where we agree. Let’s try it soon—maybe with Martin here, too. I know we share many views, and identifying this common ground is a good reconciliation technique. For now, you and Susan should be patient with Kevin. He’ll make his own big contribution, I know it.”

Martin walked Laherty to his car, expecting a Mercedes at least, and certainly not his beat-up Chevy. He gave Martin another bone-crunching handshake, and they exchanged a few words. As he drove

off, Martin could see two crudely-lettered bumper stickers illuminated by a street light. On the left was, "Love one another for Christ's sake!" while the right side proclaimed, "Jesus is coming and He's really pissed!"

13. Epilogue

Tuesday noon, October 20

The fuzzy video image showed the back of a stocky man with close-cropped hair. He tore off a piece of tape and wrapped it around a clock and a battery. Wires dangled from the battery, whose rectangular bulk dwarfed what looked like a wind-up clock. Another strip of tape went around two short pipes, capped at the ends. Then the pipes and clock-battery combination received a share of tape.

A tiny microphone relayed the man's voice. "I'll keep those bragging kids out of this project. They'd want all their friends to know." Tongue between his teeth, he kept on muttering and mumbling to himself while he attached more wires and the detonator—but nothing dangerous yet. Those cops would see—take his rifle, lecture him. No one paid attention to him but to lecture, to talk down. He'd show them all. He could improvise anything. As a teen-ager so long ago he'd loved to set off large firecrackers in unexpected places—once even in the police station itself. He would drill a hole through the base of a cone of incense, stick the fuse in, and light the cone's top. It had never failed to go off after about five minutes, time to get away.

Ready for the final connections, and he was more nervous than he'd expected. A slip-up would kill him, but the tiny wires on the alarm hand had made perfect contact with only a small light bulb attached. The hand would make two-thirds of a revolution, and in sixteen hours, a small explosion. No big deal, not to kill anyone, just enough to get their attention. Now! The attachments were made, the clock set. Crude, but effective, it should go off about two in the morning.

He'd spent the whole previous day looking for a good place to leave his offering. The town had an open square at its center, with

an ugly statue of a former war hero. He'd always hated that statue—had painted it, defaced it as a child, and now he would blow it up. He'd made a clever carrying bag with a hole for a bottom, holding an inner bag that could be released and unobtrusively left behind. The inner bag was painted a mottled green and would almost disappear beside a bush at the statue's base. Even a camera pointed right at him would only show him resting briefly and moving on, apparently not leaving anything. With luck they wouldn't notice the bag. He smiled in anticipation as he headed out the door with his bags and his bomb.

On another screen a tiny bright-red figure now moved among the green and yellow ones. Two watching police officers exchanged significant glances; then one reached for a phone.



The standard mistakes continued—ecosystem destruction, depletion of food sources, loss of topsoil, pollution. With not enough edible resources to feed everyone, farm prices quadrupled, then went higher yet. Levels of greenhouse gases climbed upward despite cries for their reduction. After ten years, rising ocean waters threatened to flood coastal cities. Hoards of refugees fled the areas at risk—over two hundred million people on the move. Depression followed the collapse of the world economy. Once areas were isolated, the depression tightened, leading to a loss of control by larger governments; local feudal realms took over. The old testament scourges stalked the land.

“Damn,” Martin Davis muttered as he saved one more failed scenario in the NewWorld simulator, a program that modeled the earth's future. He'd gotten it free off the net

He sat before a huge computer screen in a small room near Ralph's office. At least it was a room to himself and not a cubicle. The six months since he'd come to town had passed quickly—always with more to do. He thought about the image the old police surveillance blimp might have shown now after half a year—a nearly identical view of the town, no obvious changes. But he knew the town and the larger world had altered a good deal, and the pace of change

was accelerating. It was subtle, though—nothing visible from above. More computers with more power were hooked into more capable networks with better hardware and software, providing opportunities for access to information—more electronic interaction of the town with the larger world. A technology still in its infancy, so where was it heading? What would the world be like when each person could retrieve every bit of public information anywhere? When groups of remote individuals could participate in many activities as if they were physically together? Martin's biggest contribution had made official meetings in this brave new Walden accessible in real-time or archived for later viewing. The meetings were part of the town's web site, so anyone in the world could see them. It had cost almost nothing, no new hardware. The citizens also had unusually good privacy of their communications, and new means for open expression of their views. But nobody, nobody knew where it would lead. Some would never use the new technology, Martin thought, but just as isolated unvaccinated animals in an otherwise vaccinated population share the general safety, even the non-users would benefit from improved security and privacy and free speech, not to mention the all-important open access to information.

Martin was adjusting to the implications of life in a more controlling society, and there were mostly benefits, so far. Mentally, he put emphasis on the "so far." He himself was helping shift to openness and away from surveillance and control. He now hardly thought about cameras watching him in public, but he did have an automatic assumption of his safety anywhere and at any time.

Martin started up a new simulation. His thoughts drifted to the evening months ago when he'd come upon two drunk men looking for trouble. Just as he began to wonder what he would do, a bright light came on in a tree, and a disembodied voice called one of the men by name. The two grumbled and dispersed. A police officer watching him through a camera—was that different from the same officer happening to wander by at the proper moment? The hardware allowed them to be many places at once, while the software called their attention to possible trouble. Was it bad to do a better job keeping the peace?

A local television news story had recently told of a farm couple's murdered son. They lived outside a nearby town. A mental patient was released early under a special state program; he'd deceived his doctors and was not ready for the world outside his hospital. The father's grief over the loss of his only child was written on his face. He'd spent four years trying to change state laws, trying to do something, anything. The couple was too old to have more children, and their empty lives stretched before them. Why not maintain effective control over a newly-released person with known mental problems who had killed before?

Martin glanced at the clock icon on the screen. Eleven-thirty, not much time to finish another simulation run before lunch. Becky was coming by to take him out for barbecue. No matter how he tweaked the program, the outcome was always bad: collapse and starvation. In fact, the best long-term outcomes came after a horrible disaster, say, a rapidly spreading lethal virus, one that killed much of the population. The software let him introduce new higher-yield plant species or unexpected sources of energy, but always after a few years of prosperity, the world fell apart again. Stability only came from extreme assumptions, like strict population control.

After awhile Ralph had laughed at his fixation with the game. "Don't you know, environmental crazies, greens, wrote that software. Of course it'll predict ecological disaster."

"It doesn't seem that way," Martin had said. "It lets you insert any bias you want, from optimistic to pessimistic. And you shouldn't talk that way, you know. The pro-growth faction loves to label the other side as 'environmental extremists.' "

Ralph was his boss now, so Martin was glad he allowed game-playing at work. Ralph had a theory that workers needed a release from their work—to do something weird now and then, amusing or frivolous. Another crime, thought Martin: misuse of the town's resources, justified as a need for release, for relaxation. Well, the simulation was his outlet at present. He'd continued telling Ralph about the program: "This simulation starts with an object-oriented description of the physical world. Then one builds scenarios that one can run forward into the future. They even give you 'alternate pasts,' like

one where Hitler died and never invaded Russia. History's greatest criminal, eliminated by a few lines of computer code. Will the 'real' world ever be so malleable as this?"

He'd been selling Ralph on the program a week before, but Ralph had no time to play with it. Instead Ralph kept coming up with plans on top of plans for their real work: Coordinate the town's information; make it accessible where possible. Adults already had access to the scanned images from cameras; a special project was to encourage private volunteers to watch the images in shifts, like old-fashioned neighborhood block watches, though they had software agents already doing this work. Then one needed to *deny* access to private information—a harder task. Even a child's teacher shouldn't know everything about a pupil—whether he's undergone psychotherapy, say. Ralph was using a hybrid of military and commercial access controls, and they now encrypted the network traffic.

Martin had shown the simulation to Kevin, the hacker, who had briefly been his roommate, but there was no spark of interest. It had been a crazy thing to do, but he'd talked Ralph and Kevin's mother, Susan, into letting Kevin share an apartment with him. Susan and Ralph had gotten married, and they soon saw what a strain it was for Kevin to stay with them. The court had sentenced Kevin to several hundred hours of community service and two years probation. But Kevin was gone now, with his probation officer's permission, out in the South Pacific on a Greenpeace ship, officially there to look for meteor remnants from Mars in Antarctica, but also ready for environmental confrontations. It surprised Martin how much hope they all placed in Kevin.

There was a rumble, a shaking of the building. Martin, like any good former Californian, assumed it was an earthquake until he remembered where he was. If not an earthquake, then what? A sonic boom? He glanced again at the screen's clock icon. Almost noon. Becky was due, and she was seldom late.

He started the simulation again from the present with modest population control, to see how little control would keep the world stable for a hundred years. He put in other optimistic parameters, while trying to avoid anything extreme. Soon he was totally absorbed, like a

child with a new video game.

Martin thought he might show the results to Bob Laherty when they met tomorrow for lunch—their fifth meeting. Martin hadn't been able to get Ralph to join them, but Martin enjoyed arguing with Laherty, whose probing mind kept poking holes in their plans. Each of Martin's answers just led to more questions. Martin had admitted that they couldn't make a system immune to abuse by the government, but they could try, and Laherty, though not impressed, was at least listening to their plans for open, uncensored access to information.

By twelve-fifteen he was getting grumpy, part of his lunch hour gone, when Becky opened the door. She looked disheveled, stressed somehow. Then he saw blood on her forehead.

"What happened? You're bleeding." Martin said.

"I'm—all right," she said. "Just a bit disoriented."

"Sit down. You don't look so good. Let me get paper towels."

She sat till Martin came back. He then held a damp towel against the cut on her forehead. Now her hands and lips were shaking, making her hard to understand.

"It was a bomb, out in the town square. It looked as if several people were hurt."

"*You* were hurt," Martin said. "Why did you come here. You should go to the hospital. You shouldn't act so brave."

"I'm not brave; I really don't think it's much, and I hate hospitals."

Martin peeled back the paper towel and examined the cut. "Trust me on this. It looks deep enough that you should get stitches. Do you think you can walk? The hospital's only a few blocks away." Martin changed his mind. "No, you shouldn't walk. I'll bring my car around."

In the car, Martin asked about the bomb. "I thought it was an earthquake at first."

"I don't know anything about it. Just a big explosion, and then people running over. Someone tried to help me, but I waved him away."

There were several others from the bomb site in the emergency room, and they had the usual endless wait to see a physician while

a clerk asked all sorts of questions about insurance. Before anyone looked closely at her head, a police officer talked with Becky for a long while, out of Martin's hearing. Then he waited another twenty minutes while she received an X-ray.

Later Ralph showed up as a physician put in her stitches. At one point Martin said to Ralph, "I thought crime was impossible in this town."

"Not funny," said Ralph.

"I wasn't trying to be funny. It looks like Becky is all right, but what about the next time, the next bomb? I thought your cameras would spot a person carrying a bomb around."

"They might if it were a black cartoon bomb with a long fuse hanging down. Even big cities don't have bombs go off too often; we've never had a bomb explode in this town. Never. Thank God no one but the bomber was badly hurt—the bombing 'suspect' I should say. There were just a few other people with minor cuts, like Becky."

"I don't call that minor. They X-rayed her head and are still worried about a possible concussion."

"I'm starting to think like law enforcement: anything short of a major injury is minor. But the doctor I talked with was optimistic. The bomb also damaged the base of a statue, tore off one bronze leg. There were broken windows, and that's it.

"Who is this bomber?" Martin asked. "Is he in custody now?"

"He was badly hurt—I'm not sure what his injuries are or if he'll survive. He's off by helicopter transport to the Level One trauma center about sixty-five miles south of here. We're not prepared to deal with such injuries.

"His name is Richard Lane," Ralph continued. "One of the local crazies, part of our opposition. He was the leader of a small group destroying cameras and other equipment."

Ralph ran fingers through what hair he had left and started sounding distracted. "I keep thinking about how our controls, just their existence, seem to provoke antisocial behavior in a few individuals, behavior they wouldn't normally think of. This bomber has a good job; he's an intelligent guy. The police were careful when they told him they knew about his sabotage activities. They were almost nice

to him—probation is all he got, because he had no record. But now this, the bomb.”

“What happened, anyway?” Martin asked. “How did his own bomb catch him?”

“I have a theory,” said Ralph. “I’ve known Richard for years. He’s not the type to kill people. He likes gestures. I would guess that his bomb had a timer, set to go off late tonight. There’s seldom anyone around here after midnight. When he set the bomb down at the base of that statue, maybe it wasn’t steady—fell over and jiggled the wires. We may never know for sure, but the department has video tape from a bug inside his house that should help.”

“How about other surveillance camera images?”

“That’s the silly part, like a sick comedy. Because of the earlier episodes, we’ve been keeping track of him—his home is wired, as I said, and the software has him tagged as a special ‘red’ individual. He had his bomb in a grocery bag with handles, and the exaggerated way he tried to be nonchalant as he carried it was almost a parody. Two officers were heading over to arrest him as the bomb exploded. He wouldn’t have gotten away with this even if he hadn’t been hurt.”

“So it was easy to follow him,” Martin said, “since he had done his earlier sabotage. But even so, you didn’t stop the bomb from going off. What would you do in a larger city, with so many more random events?”

“A lone bomber who isn’t suspected—one of the Unabomber types out there—well, we might catch him before the fact, say, buying dangerous materials, but mostly we’ll only be able to prove who did it. And obviously the surveillance would be harder in a big city. Our techniques do scale up, but with a hundred times as many people, who knows? The facial and voice recognition software should work well after a ten-fold increase, since our error rate here is so low, but a hundred-fold increase? The software agents and the humans doing the monitoring might be swamped with data. I’d like to try it out, though.”

Just then Martin noticed Ralph staring intently across the room. Looking in that direction, Martin encountered a bleak gaze focused on them. Against all likelihood, it was Patrick Hoffmann, the pub-

lisher, here in the emergency room, though he didn't appear hurt. Ralph visibly straightened and tensed when Hoffmann walked over to them.

Ralph spoke first. "You must be here to see about your friend Richard Lane. He's gone, though, transported south by helicopter; you can pay him later for his work."

"That's a lie, a damned lie, and you know it."

"Well, he likely won't be testifying against you, so your luck holds this time."

"I could sue for slander, for making false accusations," Hoffmann said smoothly. "And you should congratulate yourself, Ralph. You kept me from getting elected mayor, but another election is coming in eighteen months. I think I'll make it, and afterward there'll be an accounting—find out what you and your friends are doing and why. A reorganization. Maybe some of you people need a new job elsewhere, for a better career, more satisfaction."

Ralph's voice was tightly controlled. "In fact, the town is too smart to make you mayor, now or later. Maybe *you*'d be happier in a different town."

Martin noticed Hoffmann's clothes for the first time—very expensive—his perfect silk tie and perfect imported shoes. Did he always dress this way? Was he really as bad as Ralph seemed to think? "You even drove Kevin away," Hoffmann said, "after denying me my rights to him all these years."

"Your rights!" snapped Ralph. "Just your little fantasy designed to drive Susan crazy. I'm busy now; I don't want to talk with you. Thanks for warning me about the next mayor's race."

"I'm always happy to help you—any time."

Hoffmann directed a dark scowl at Ralph as he walked away. He sat down across the room and resumed a conversation with a middle-aged man waiting for treatment.

"What was Hoffmann talking about?" Martin asked. "His 'rights' to Kevin."

"Please don't repeat this around, but you may have noticed a superficial similarity between Hoffmann and Kevin. Hoffmann latched onto this and onto the fact that Susan divorced before Kevin was

born. Susan and Hoffmann's younger brother were friends, though she never had 'relations' with him. Anyway, Hoffmann claims Kevin is his nephew."

"That ought to be verifiable," said Martin.

"Oh, the brother is dead now, buried somewhere, I don't know where. It's all conveniently uncheckable, and typical of Hoffmann to come up with a complex and bizarre theory to make trouble. He even wanted genetic testing of Kevin; Susan, along with Kevin's real father, refused to consider it, of course. Both their lawyers strongly recommended against giving in to testing. I'm more worried, though, about Hoffmann as mayor. He would seize control and then do God knows what."

"So keeping control out the wrong hands—that's the weak point of your proposals, just as Laherty maintains."

"We've always had that problem; we always will. I've said it before: the open access to information will help prevent these clever, ruthless people from taking charge, and will limit their activities if they do seize power."

But, Martin thought, the power hungry would still be around waiting for their chance. If Ralph was right, Hoffmann was such a person, and in any event others would be ready. He spoke up again: "Another approach besides openness is decentralized power, distributed control. The sharing of power, the checks and balances, has often worked in America to curb those who would control everything."

At that moment, Becky came out to them with a bandaged head, evidently finished getting stitches. She had refused to let Martin call her parents, saying that her mother would just "go crazy" at the news. A few more forms to deal with, and she was free to leave, clutching printed instructions.

They said good-by to Ralph and headed for Martin's car, as he related what Ralph had said about the bomber.

"Richard Lane," she said with distress. "I know him. I knew him well. He was two grades ahead of me in high school. What terrible news. I hope he recovers."

"How could anyone commit an act like this?" Martin wondered

aloud. “Such trivial motivation leading to such a serious crime. It’s crazy.”

“No, not crazy,” she said. “This is the way we are. Anyone, everyone has within themselves the potential to go down this path. I’m what one calls a ‘Christian pessimist’ at heart. People will always want to commit crimes; people are intrinsically evil. It sounds harsh, but even some ‘brain research’ is leading to the same conclusion—a fundamental flaw in the brain’s wiring. At best Ralph’s methods will lead to people who don’t commit crimes because they fear getting caught. Individuals must choose to do good acts, must freely choose, of their own free will. If people act well from fear of punishment, then we may have an orderly and controlled society, but not a free one. And if people only do good because they expect a reward, say, heaven, we’re no better off. Only when people freely choose to do good for no other reason than that it is right to do so, only then do we reach anything like an ideal. Doing good is its own reward. This is the ‘repenting’ of Christian thought—do you know that ‘repent’ means to ‘think again’ or to ‘turn to a new direction’? This is the mystery of being born again—the mystery expressed by the phrase ‘and the light shines in the darkness, and the darkness grasp it not’ or by ‘the way’ of Taoism.”

She paused for breath, while Martin muttered that she was a “good soul.”

“I’m not the unsophisticated person you might think. You see, years ago I worked in a big-city women’s shelter. I saw horrors there—women abused, beaten, raped, and worse. Doing good, doing what’s right, requires constant awareness and work—more work than many in society want to expend.”

An inner part of Martin was stirred more than he would have thought possible. He dropped her off at her home, where as expected her mother soon was nearly hysterical even though Becky looked fine. He got promises from her mother to take care of her, to let him know if she needed anything. He drove home in an odd mood. She’d come to his office even after her injury. Did that mean anything? For six months he’d wondered if she really liked him, and maybe this was the answer. What did he want? Why not settle down?

The next day he brought her flowers—a trick his sister had taught him long ago. Becky disclaimed a need for flowers but was clearly pleased. She seemed chagrined, even embarrassed. “Sorry for the bad mood yesterday. I’m not usually so ... pessimistic. I don’t really think people are mainly evil. Most people are filled with light—a glow from the inside if you look for it.”

To Martin she looked like an innocent from some modern garden of Eden. He’d heard that metaphor used for honeybees, those industrious gatherers of nectar, who make honey and wax, who are fierce in their swarming and stinging, and are devoted to their queen. Once, these bees were thought to be divine, perfect creatures escaped from Eden. And was Becky such a creature? No, just romantic nonsense, Martin said to himself firmly, and old-fashioned science, too. For a biologist sees a honeybee hive as a single social organism weighing a kilogram or so; to the computer scientist these bees illustrate complexity emerging from many simpler parts, and control from below.

And what about Becky? She wasn’t perfect—just superior to him. Why would someone like her want him with his faults? But maybe she did. He’d been a fool for too long, drifting, dawdling. It was time to rethink his life, take charge of his future.

So many possibilities and choices and decisions lay ahead. And even with accumulated wisdom, reason, and inspiration, even with access to information, privacy, and free speech, and with tools like simulation, one could only see a little way through the haze, just enough to try for an upward path.

