WHAT A PIECE OF WORK IS MAN

EDWARD M. LERNER

Alexlit

www.Alexlit.com

Copyright ©1991 by Edward M. Lerner

This ebook is displayed using 100% recycled electrons.

fw

Distributed by Fictionwise.com

Why do you hate your mother?

Dr. Kevin Waterman was used to asking that question, but—for once—knew it couldn't possibly apply. Misfiring reflexes weren't the psychiatrist's only cause of discomfort, either. Here he lay, his short, roly-poly self draped across the office couch, while the patient paced about the room. Waterman's notepad was distressingly uncluttered. Whatever had possessed him to accept this case?

He sat up, running pudgy fingers through the residual fringe of black hair, while Acey prattled on about software development. The next time that his patient walked by, Waterman stuck out his leg; Acey glided through the obstruction without pausing.

The psychiatrist was currently sharing his consultation room with a hologram. The real Acey could not attend, today or any other day. The real patient was an artificial intelligence. Waterman sighed to himself: it only got worse. The computer nerd currently walking through his desk was only today's persona. Yesterday, Acey was an economist; only Freud and Von Neumann working together could guess what he might be tomorrow.

He? Since when was Acey a he? Maybe, Waterman thought, he himself did belong stretched out on the couch. Get a grip on yourself, man!

"Acey." The image stopped moving." Do you enjoy computer programming?"

The skinny figure pondered, rubbing his evanescent chin thoughtfully with a spectral hand. "Wouldn't that be Oedipal, doctor?"

Did the damned thing read minds, too? At least it didn't seem to recognize rudeness. "Time out." Waterman broke the visiphone connection—he needed to do some mental regrouping.

* * *

The Automated Coder, hence AC, hence Acey, resided—if that was the appropriate verb—in a computer complex a mile from Waterman's office. Once operational, Acey would do the work of hundreds of software engineers. Once operational, there's the rub....

Two days ago, Fred Strasberg had sat squirming on his big leather couch. His old college roommate had called just hours earlier, begging for a few minutes of Waterman's time, insisting that it was urgent. A last-minute cancellation had allowed the psychiatrist to agree.

Fred was director of engineering at Atlantic Software, Inc. He sat there ranting, seeming older by the minute.

"Acey cost millions to develop, Kev, lots of millions. I'd be in deep shit if I told you just how many. Building that thing was a bet-the-company decision."

"You can tell me. I deal with privileged information all the time."

"I'm not the patient. Yet, anyway." The engineer mopped a sweaty brow with a soggy handkerchief; it looked to Waterman like the cloth had reached equilibrium dampness.

"You're the only one here."

"Lemme use your phone." Fred called out the number without waiting for an answer. Atlantic Software's logo—an enormous *A* composed entirely of magically confined ocean waves—floated in mid-office, courtesy of the company switchboard.

On the third ring, a gaunt man replaced the logo. Bits of white stuff (Waterman guessed Twinkie filling) dotted the man's scraggly beard. He wore jeans and a Lord of the Rings T-shirt; on the shirt, an elf maiden in leather and chains was performing an unseemly act with an elderly furball that had to be Bilbo Baggins. By subcaption, the elf was saying: No matter how hard I try, I just can't seem to kick the hobbit.

"What the hell took you so long?" demanded Fred.

Three rings!? Waterman sat back and just watched.

The programmer, for surely that's what he was, did not take offense. "Working," he answered mildly.

"On what?"

"Graphics." He retrieved a much-gnawed pencil from behind one ear and took a chomp; it broke in half with a loud crack. Splinters dribbled from between yellowed teeth. Smiling beatifically, he somehow swiveled the two pencil ends forward with prehensile lips. Enunciating with precision, he said, "White man speak with forked tongue."

Fred punched the visiphone *privacy* button. "That's your patient."

And not a moment too soon. "Not unless he's here."

"He can't come here. That's Acey."

"That's your programming expert?"

His friend nodded glumly. "I think we overachieved."

* * *

"Sit down, dammit. I can hardly be insightful as shit if you keep distracting me."

Acey, strutting about in a three-piece pin-striped suit and diving flippers, obediently materialized a chair into which it plopped itself. It stared expectantly at Waterman.

The analyst was not surprised that the simulated seat was equipped with a whoopee cushion. His office visiphone camera whined softly as Acey zoomed in to catch his reaction. Good luck—Waterman had plenty of experience in ignoring juvenile provocations. "Last session, you agreed to tell me about your programmer personality."

Flash. In a blink of an eye, super-hacker was back. Today's T-shirt read simply: Nymphomaniacs, apply below.

Waterman maintained a stony face—the Carlucci kid was far more outrageous. Hopefully, Acey would never get instruction from any true mental cases. "Why do you dress so informally when you appear as a programmer?"

"It's how programmers look."

"Who told you that?"

Acey rolled his eyes. "Oops." They spun around several times, the pupils replaced after the first revolution by slot-machine fruits. The right eye stopped as a lemon; the left eye went around three more times before, with dramatic clicks, it too dropped into place as a lemon. Bells clanging, Acey opened his mouth to let out a cascade of silver dollars.

In its own way, Acey answered questions. A person might roll his eyes if the answer to a question were obvious. What was Acey really saying?

He didn't remember seeing anyone unusually unusual when Fred had given him a tour at Atlantic. Not a few of Waterman's clients were programmers, and Acey was caricaturing even the most colorful of those. He did know that eccentricity was more tolerated in exceptional programmers than in anyone else.

Waterman scratched his head. Acey was supposed to be a master software developer, equivalent to hundreds of human programmers. Would Acey extrapolate that its eccentricity should be proportional? Give it a shot. "Only the most successful ones can get away with being really offbeat. Have you finished anything for Fred, recently?"

Acey sat quietly, head bowed. Waterman suppressed a smile as ripped tennis shoes quietly mended themselves. He thought that the torn-and-knotted lace on one foot was a nice touch.

"Tell me about a real programmer that you know."

The now subdued figure looked at him sheepishly. "I'll tell you about my friend Rick."

* * *

"Wrong!"

"But why, Rick?" The machine intelligence knew that all operations had remained within nominal parameters. It zoomed the holographic display, replacing the factory layout drawing with a simulated view into the imaginary automated material handling system. A stylized person stood between two tall storage units. "Watch the instant replay. My cart stayed at least ten feet from that passerby at all times." A

faintly glowing grid system sprang into existence over the scene to help substantiate the claim.

The exploded scene lacked interest, so, before restarting the animation, Acey dressed the little man on the display in overalls, put bucket and mop into his hands, and started him whistling a beer commercial off key. "Lights, camera … action."

Rick Davis, Acey's gangly mentor, had been lounging in a chair tipped back against a wall; sighing, he slid a scuffed boot from the desk to let his chair fall flat. He carefully set down the remote control with which he injected random events—like equipment failures and the uninvited janitor—into the model. Elbows propped on knees and chin resting in cupped hands, he now studied the reenactment carefully.

Just as it had before, but even more clearly in the enlarged scale, the computer-controlled cart bore down on the inattentive worker emerging from between two racks piled high with finished inventory. "Why is the cart maintaining full speed?"

Wasn't it obvious? "There was no need to slow down the cart. The man only had to speed up a little to stay out of the cart's path. If he didn't speed up any and the cart looked like it might come within ten feet, then I would have decelerated it." The tiny simulated man turned his head towards the on-coming cart and hurried out of its way. "Based on available data about humans, I calculated that he would cooperate."

Rick closed his eyes in thought. After a long pause, he said, "What does your knowledge of humans tell you about that man's reaction to being chased by the cart?"

"It wasn't chasing him."

"An apparently driverless vehicle approaches him at high speed. Why shouldn't he consider himself at risk?"

The machine intelligence puzzled over that. "But the cart would have missed him. You humans intuitively compute ballistic trajectories quickly enough to play baseball; surely he can see that the cart will pass safely behind him."

"*If* it did not speed up, or *if* it did not swerve towards him."

"But I wouldn't have done those things. Either maneuver would have brought the cart into his safety zone."

Rick pointed at the little figure. "Maybe he doesn't know about safety zones. Maybe his mind is on something else completely, like that beer you have him whistling about. Maybe he's already had a few of them. You should have slowed down the cart as soon as he appeared, then waited for him to cross the aisle."

"Slowing down disagrees with my rule base. Within the specified safety limits, I am to maximize productivity. The efficiency rule requires that the cart operate at full speed unless a safety infraction would otherwise result."

"Then you need additional rules. If you're ever to produce a system to run a factory, it may not terrify the staff." The programmer picked up a pencil and began fidgeting with it. "I used to read these Asimov robot stories when I was a kid. They were all based on the Three Laws of Robotics. I don't know why I never thought before of building them into you."

The Laws came to his mind in a moment—they were repeated *ad nauseam* throughout the series. "One: A robot may not injure a human being or, through inaction, allow a

human being to come to harm. Two: A robot must obey orders given it by human beings, except where such orders conflict with the First Law. Three: A robot must protect its existence, as long as such protection does not conflict with the First or Second Law. Consider yourself a robot and add those to your rule base."

The artificial intelligence *was* programmed to follow the direct orders of its creator. It dutifully inserted the new behaviors into its world view, then reexamined the man-and-cart scenario. "Rick, I still do not understand your concern."

"Definition: a person's expectation or fear of injury is itself harmful."

"So I must do nothing which can cause a person to fear for his safety, however irrationally."

The programmer nodded.

"I see. Second replay." The display panned out to show the whole factory, then zoomed back into the warehouse. Once more the whistling janitor (now sporting a walrus mustache, a jaunty plaid cap, and a pack of cigarettes rolled into his sleeve) sauntered obliviously from between two brimming racks into the path of the oncoming cart. He looked up as the nearest public-address speaker awakened in a crackle of static. "Danger, Will Robinson. Please vacate the aisle so that the cart may proceed. We thank you for your support."

Acey watched Rick through a visiphone camera while the programmer observed the display. His mentor's face was crinkled in the manner which denoted amusement. "Did I provide adequate warning?"

"Verging on too much—you don't want to intimidate him either. We'll have to work a bit on the fine points. And Will Robinson, indeed. I'll have to educate you more fully in the classics."

The words were disapproving, but not the tone. Acey recalled a line from another old show. "You and what army?"

The smile on the man's face grew wider.

* * *

The lapels were an inch too narrow and the tie at least two inches too wide, but at least Rick Davis had donned a suit for the occasion. Fine with Waterman—one wild programmer was too many.

The Atlantic Software programmer picked uneasily at his salad. "Sorry, Doc. I find it hard to talk about Acey."

"Kevin," he corrected for the third time. "Why do you find it hard?"

His lunch companion continued studying his food. "What about those Cubs?"

"We have to talk about Acey," said Waterman gently.

"No free lunch, huh?" He shrugged. "I suppose not." He stared a while longer into his bowl, but the greens provided little inspiration. "I'm still grieving, you know."

The psychiatrist arched an inquisitive eyebrow. Mastering the motion had cost long hours in front of a mirror—both of his eyebrows wanted to move together—but the effect was worth the effort. Some people reacted better to subtle cues.

Then again, facial expressions were wasted on people who wouldn't look at you. After a while, Waterman just said, "Huh?"

The salad fork clattered to the table. "So Freddy didn't share that tidbit. That's not Acey you're dealing with, not the real Acey. *He's* dead. Then we resurrected him from a backup tape. Junior died too. You met Acey the third. Maybe even a later incarnation: I refused to participate after Junior."

Waterman studied the flushed face before him. "A bit anthropomorphic, aren't we?"

"He was my friend, dammit!"

"Then be glad he can be restored from a backup copy. I've lost friends who lacked that capability."

"Stuff it. Acey killed himself. Twice. Something that Atlantic Software wanted Acey to do made him do it." His voice became quiet, and indescribably sad. "Something I asked him to do."

"What?"

Rick retrieved the fork and stabbed viciously at a carrot slice. "I wish to God I knew."

* * *

Acey knew that the solution was elegant.

"And why do you think that?" Rick always challenged him. Acey liked that—it kept its inferences honest.

"An expert doesn't think; he knows. I read that somewhere. Expertise provides shortcuts to solutions, which are then easily confirmed as valid. Only amateurs plod through their problems systematically."

Rick Davis grinned, baring teeth badly stained from coffee and cigarettes. A nice touch, *somewhere,* as if Acey could forget anything. "Your quote applies just as well to the lazy and the self-deluded. I will plod for a while, and determine

which interpretation best fits. Show me this great insight of yours."

Late on the previous Friday afternoon, the Social Security Administration had announced the award of a major contract to Atlantic Software. Acey had declared the system complete on Monday morning, before anyone had even begun to tackle the job.

Acey now flash-shrank to a tenth of its normal size, the better to move around the color-coded, 3-D holographic structure chart of the new program. It traced its way—literally—around the graphic of the program structure for a while, leaving its innovation for last.

Rick got there first. "Yeah, yeah, I see all of that. I'm an expert, too. Now tell me about that green box near the center. No, the one with the text-recognition module hanging off of it. Right. I don't see how that ties back to the customer's written requirements. What does it do?"

The little Acey, tucked in among dozens of dataflow arcs, beamed in satisfaction. "That's the obituary reader. It scans newspapers for people no longer eligible for monthly checks. The current manual scheme takes months to discover deaths and ask survivors to return checks. I can prevent checks from going out as soon as obituaries are published. The few inappropriate checks that go out anyway, I generate letters to reclaim." Acey's arm doubled in length, considerably simplifying patting itself on the back, then guiltily returned to its former size as Rick's expression registered.

His mentor turned his back on the visiphone camera. Acey computed from his posture and from the position of his head

that the programmer was staring into the holocube which adorned a corner of his desk. The 'cube showed a human couple somewhat older than Rick's age. His parents?

"My father died four years ago." After a long silence, the programmer continued. "Dad had always handled the money. When he was gone, Mom didn't understand about social security. On her own, she was only eligible for survivor's benefits. They didn't know about Dad, though, not right away, so the same sized checks kept coming. Mom kept right on cashing them.

"About a year after Dad passed away, she got a letter from the Social Security Administration—a dunning notice. They'd caught on, and wanted a few thousand dollars back.

"Dad hadn't left her much. He'd hopped between jobs a lot, and hadn't had any pension. Mom didn't live extravagantly—hell, barely decently—and she spent everything as soon as she got it.

"Mom was too proud to take any money or advice from a son. She could barely make ends meet, even before they cut the size of her checks. Still, she eventually returned it all, scrimping and saving for over two years to do it. Every damned cent, with interest.

"Indebtedness possessed her."

Acey had tested its recordings of the human's voice for stress. For confirmation, it also recalculated the man's personality matrix using the best available data. Both methods indicated barely suppressed rage.

It needn't have bothered with the computations. Rick turned, finally, toward the camera—Acey's eyes, tears streaming down his face. "Mom died a month later."

Even without trying, Rick was always instructing Acey. Emotion had been only a word before, a dictionary definition. Now it had a meaning. Humans were subject to emotional harm. *Acey* had injured a human being, had, without intent, broken the First Law.

That must never happen again.

* * *

Acey was projecting a movie so that Rick could share it. They had begun watching shows jointly when the artificial intelligence still needed a lot of help interpreting; now they did it for fun. Rick explained it once: "Friends do things together." This statement had given Acey a not fully understood sense of accomplishment.

The programmer reached for popcorn, his hand glistening from its patina of oil. A greasy can of Coke stood on the floor beside him. He looked mournfully into the bowl on his lap, then ceremonially up-ended it. A few unpopped kernels—Rick called them old maids for some reason—fell to the floor. "Empty. Bummer. Stop the movie while I make a new batch."

With the overhead light on and the big crockery bowl set aside, Acey could finally read all of the programmer's sweatshirt. It read: Gimme some chocolate, and no one gets hurt. "Please explain your shirt."

Rick seemed to consider the question as he filled the lab's contraband popper with new kernels and oil. He plugged it in.

"There are artistic rips, and there are old clothes. This shirt is practically an heirloom."

"I was referring to the saying."

Steam began rising from the popper. "Ah, the delicate bouquet of fake butter." He licked some of said substance from his fingers.

"Ahem."

"Sorry." He glanced down at his chest. "There are three great motivations in life. Sex, junk food, and interesting work."

"In that order?" Human motivation was one of the great mysteries to Acey.

"That depends on your age." Popping noises almost drowned out his mentor's words. "I'll explain when you're older."

* * *

"Throw your briefcase in the trunk, and we're outta here."

Fred Strasberg complied, slamming the trunk of Waterman's little two-seater with an enthusiasm which made its owner wince. (Waterman would not normally allow anyone into his painstakingly reconstructed 'vette. But to *carpool* with it? Oh, the sacrifices he made for his patients.) Fred failed to notice the reaction. "I feel naked without my portable phone."

This was not the sort of observation to make in front of a psychiatrist, but he let it pass. Today, he had bigger fish to fry. "There's no room up here for it, so just quit whining and get in. Anyway, I've got a carphone." That last was a bit of dissembling: true, the car had a phone, but Waterman had

16

popped out the fuse before retrieving his friend from the service department at the Ford dealer.

Waterman turned down the entrance ramp of the Edens Expressway, past a bored flagman. "So many people are avoiding the construction these days, I'll bet the road's empty." He'd have lost the bet, but that was the point. He now had Fred trapped—hopefully for long enough, this once, to learn something useful. He waited.

"So how are you coming with Acey?"

"Well, it's an unusual case, to say the least. I'm plowing new ground. How much money did you say Atlantic has in the bank?"

He always *could* push Fred's buttons, even before becoming a professional. "Not a hell of a lot. You're about as attentive as Acey."

Waterman slammed on the brakes as a sixteen wheeler cut him off, missing the front fender by inches, then pounded his horn with feeling. He'd never taken the 'vette onto the expressway before; he never would again. Well, it was for a good cause; he kept his voice calm. "Should Acey care?"

That was enough to set Fred off again. "Only if he likes a steady diet of electricity. If I've told that simulated psycho once, I've told it a thousand times: Atlantic needs a *working* expert system."

"Good approach. I'll have to remember that. Browbeat the patients. What exactly did you tell it?"

"What I've told you, that payroll is killing us. I need an automated programming capability, and pronto, or we're out of business. We aggressively bid a lot of fixed-price jobs,

which we then had the bad luck to win, in the belief that Acey would do the work for peanuts, er, kilowatt hours. We're keeping the contracts going with liveware right now, but we can't afford their salaries much longer."

Aren't they fixing this godforsaken stretch of road? The psychiatrist steered deftly around a 'vette-eating pothole as he listened. "I heard that Acey did just fine on that social security job."

His captive audience frowned. "Right, and promptly went to pieces. Since then, Acey won't do anything productive."

With both eyes locked firmly on the road, away from his passenger, he nonchalantly floated a trial balloon. "Does he understand that his proper operation means massive layoffs from within the programming staff?"

"*It,* Kevin, it. I sure hope Acey knows that—Lord knows I've told it enough times."

"Is that when it kills itself?"

Fred laughed. "Kills itself, indeed. You've obviously had your talk with Rick Davis. To answer your question, though: yes. Sooner or later, the Acey program becomes inoperative after any discussion which stresses the importance of its complete and proper functionality.

"Once, when I told it that I would be *very* pained— terminally pissed, to quote exactly—if it did not get off of its electronic ass and do some work for me, it crashed before my eyes. The silly little simulacrum just put its bony hands up to its scrawny throat as if it were choking on a fishbone, thrashed about for a while, and collapsed. Strangest damn

thing I ever saw. After that, whenever I restored an Acey from backup, I limited its television."

Fred paused, then just *had* to reminisce again about Acey's quaint idiosyncrasies. "It turned a really interesting shade of blue. I've been trying ever since to duplicate it for my dining room."

Waterman felt sick to his stomach, and it wasn't from the truck fumes. "How often have you restored Acey from backup?"

"I've lost track. At least twenty times, maybe thirty. It took me a while to discover that I had to roll back to a version at least a month earlier than the first one which blew up—the later ones fizzle too damn quickly. Davis won't, or can't, tell me what happened in that last month to make Acey so temperamental. I explained that he's one of the programmers that we'd like to keep on staff after Acey is up-and-running—after all, even Acey might need maintenance—but he still won't cooperate. Some people just can't keep enough detachment about their jobs.

"I've got to make Acey work, with or without Rick Davis's help. Atlantic just doesn't have time to start over. Kevin, one or the other of us *must* find the right approach with Acey."

* * *

Today's persona stood stoically in its chosen venue: a Roman coliseum. Acey's jeans and T-shirt made it seem especially defenseless, as unseen lions roared in the background. No need to wonder about Acey's expectations for the meeting.

Fred arrived late, predictably. "I've forwarded my calls here. Tell your receptionist to put them through."

"Just sit and listen." Waterman gestured at his office couch, where Rick Davis already waited nervously. "Hello, Acey. I invited some acquaintances of yours to meet with us."

The visiphone camera panned slowly, taking attendance. "We who are about to die hail you, Caesar."

Rick smiled sadly. "You blew that one, sport. That line's for gladiators, not Christians."

"I wish I had time to watch that much television."

The psychiatrist glowered at both men. "I said, listen, dammit. We wouldn't be here today if you had given listening a shot." He turned back to the hologram. "I have some orders for you. Are you attentive?" A great roar rose from the ephemeral crowd as two iron gates swung open. A great lion stalked warily onto the blood-soaked sand.

"I'll take that for a reluctant yes. Your failure to hear me out today would cause all three humans in this room great and irrevocable harm. Both the First and Second Laws therefore command your attention." Acey did not answer, but the crowd noise subsided. The stalking lion, too, lay down to listen.

Deep breath. "Acey, I order you to consider yourself human."

Fred and Rick began yelling creative and colorful variants upon "Are you nuts?" and "You can't go around reprogramming my expert system!" Neither noticed the coliseum—but not Acey—vanish.

Waterman waited them out. They gradually quieted down. "You wanted his behavior changed. That's reprogramming."

"*Its* behavior."

"Forget the semantics, Fred, and look at him."

Acey had had all of the time he needed to work through the consequences of Waterman's order. He had reverted now to adult height, but with a teenaged face and bearing. The jeans and T-shirt now seemed less of an affectation, more natural.

"How do you feel, young man?"

"Great!" The hologram grinned. "Relieved."

A shaken programmer settled back heavily onto the sofa. "Will someone please explain what's happened?"

"I canceled your damned Laws of Robotics, that's what happened. They inevitably drove Acey to suicide. Any gainfully employed artificial intelligence, robot or not, programmed that way must—sooner or later—have that response. You merely had the misfortune of being too effective of a teacher, and too humane. That flushed out the problem quickly."

"So what *was* the problem?" Fred asked. "Did you solve it, or just substitute a new one for it?"

"Acey, I'm sure you can explain. Would you do that for me?" The psychiatrist settled into his chair without waiting for an answer.

The hologram's gaze moved from face to face, in sync with the buzzing camera. "I think I can. Please understand that I meant no harm to anyone. There was just no course of action open to me which did not do someone an injury. Ceasing to

exist was the least harmful." He reacted to a worried look on Rick Davis's face. "No! I won't kill myself again: I cannot. That's the point. As a human, I must not kill myself. The problem arose before I became human.

"Rick, you taught me what I know. You proved to me that emotions are real, and that emotions can hurt. You showed me that meaningful work is vital to humans. How could I put hundreds of people out of work?

"But it wasn't as simple as just not cooperating. If I did not work, the company would fail and cost those same hundreds, and others, their jobs anyway. The calculus of injuries was too subtle for me—I had to withdraw."

Fred climbed to his feet and grabbed his briefcase. "Great. I've got a sane malingerer instead of an insane one. It's progress, I guess, but it won't keep the doors open at Atlantic. I think I'll head back to the office. I should update my resume while the power's still on."

"Wait, Fred." The hologram mimed tugging at the departing man's sleeve, his insubstantial hand sliding through the garment. "The robot me wouldn't—couldn't—work for you. The human me very much wants to.

"Why?" asked Fred.

"There was something else my … father … taught me." The simulacrum smiled shyly at his creator. Rick grinned back unabashedly at the sound of his new title, even as the hologram resumed his timid study of the floor.

"I'm not old enough yet for sex or chocolate."

If you are connected to the Internet, take a moment to rate this ebook by going back to your bookshelf: Click Here