For Walt Cole

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## Contents

**Introduction**

The first man to use a machine was the first of our primitive ancestors who picked up a roc
hurl at some passing animal or to crack open some edible nut. In the million-plus years since t
our machines have grown much more complex, but even in our modern era of com-puters, roc
and color television, their basic purpose remains the same: to serve man.

Whether our machines truly serve us is a question much debated by science-fiction writers
other professional speculative philosophers. Does some essential quality go out of human life v
it becomes too easy? Have our automobiles, telephones, typewriters, and elevators sapped
vigor? Are we speeding into flabby decay because we have made things too easy for ourselves?

And as our machines grow more able, when do they cross the boundary that separates the l
from the un-living? Is it possible that we are building machines that will make humanity obso
Perhaps the day is coming when we ourselves will be rendered unnecessary, and our s
successors, creatures of metal and plastic, will inherit the earth.

The relationship between man and his machines is a complex and many-sided one, compoun
by love and hate. Many a bitter attack on the encroachments of the machine age has been produ

by a writer using an electric typewriter in an air-conditioned room, innocently unaware of the i contradictions involved. We need our machines, but we fear them; and out of this tension c ideas best dealt with in the guise of science fiction.

Ten science-fictional explorations of the man-machine re-lationship are offered here. Some lighthearted excursions into fantasy, others bleak and forlorn visions of a hopeless future. T show man as the master and as the slave of his machines, as the victim and the tyrant, as conqu and as conquered. No sermons are intended: the purpose of these tales is to entertain, to stimu to suggest possi-bilities. But implicit in them is the awareness that we have only begun to cope the problems that our age of fabu-lous machines is creating.

R.S.

# COUNTER FOIL

**by George O. Smith**

*We sometimes used to be reminded how dependent we have become on our machine substan-tial part of the northeast United States received such a reminder one November eve in 1965, when a trifling technical difficulty blotted out lights and power for 30,000,000 pe over a vast area. George O. Smith's story, written before the great power failure, shows the more devastating possibilities in a trans-portation breakdown. Of course, the transporta system he describes is one that doesn't yet happen to be in use—but allow him that one b fantasy and everything else follows with devilishly consistent logic.*

*George O. Smith has long been well known as a devil-ishly logical character anyway. engineer by trade who has been involved in military electronics research, he has been writin since 1942 and has published over one hundred stories. A good many of them deal with technical problems engineers of the future are likely to encounter, and are impressive both their insight into technological processes and for the sly, lively wit that makes them favorites of nontechnical readers.*

It was near the close of a normal day in late July, if a day in late July can properly be c normal. The tempera-ture and the humidity were tied in the mid-nineties; a reporter from the *N* fired the usual egg on the pavement while his photographer snapped the picture that would a tomorrow's front page. There had been three flying saucer sightings reported, and the Loch N monster had made his appearance right on schedule. The cases of heat prostration were runnin par, and nerves in the un-air-conditioned areas were fraying short. Still, the clock dis-played hop it crawled on toward the end of the work day and promised freedom from bondage and the rig pursue both internal and external liquid happiness.

Gertrude, the videophone receptionist, still looked crisp in her office. Her voice as she respon with the singy-songy, "Tele-por-TRAN-sit," had not lost its lilt. But it was obvious to the caller Trudy sat in air-conditioned splendor. And either she loathed the idea of leaving her comfort going home, or she despised him who called. For after the lilting greeting, her voice dropped flat, "Oh, it's you again."

Johnny Peters smiled. "Show?"

"No."

"Swim?"

"No."

"Dinner?"

"No."

"Nothing?"

"Nothing!"

"Trudy, I'm not poison, you know."

"Johnny, I know you're not poison. But you're not very ambitious, either."

"Now listen," he said sharply, "I'm only asking for a date. I'm not offering to have you share frugal life, bed, and board as a lowly technician. A date I can afford; a wife I can't."

"You could try to get ahead."

"I've made my bid. I asked my illustrious leader for advanced training and an accelerated co so I could move along faster, and he said that moving too fast was bad for a young man. Shall I now and go elsewhere?"

"Where would you go?"

"That's the trouble, Trudy. I majored in teleportonics, and it's either teleportonics or I go bac school and start something new. Think the boss-man will move me faster in Greater Chicag doubt it. So I might as well stay right here in Megapolis."

"I suppose you're right."

"All right, let's start over again. Show?"

"Johnny, not tonight. I'm busy."

"Tomorrow?"

"If we're not all cooked by then. Call me, Johnny." "Will do," he said with a growing smile.

Johnny Peters broke the connection and checked his instrument panel. The primary powe from Con Edison was running a tenth of a volt low; with bored, routine gesture he twitched a k watched the voltage rise, and then he settled back with little more to do until the end of his shi duty.

In the distant reaches of the city, the uneasy slumber of a napping woman was broken by a w of pain. A gush of body-warm wetness brought a flash of things to mind that came and went as as thought, far too rapidly to reproduce in any electromechanical medium of expres-sion. thought, in turn: It was her firstborn. The doctor said there was little point in predicting the arriv a firstborn because they had no record upon which to base an estimate. The women in her fa were prone to deliver in taxicabs and ambulances on the way to the hospital.

A second wave of pain assailed her, interrupting the rapid flow of thought. Then as the subsided, she went on: That was fast!

She struggled to her feet and duckwalked heavily on her heels to the videophone. She pressed button for one of the stored-program numbers and immediately a crisp, cool voice respon "Tele-port-TRAN-sit," in the lilt with all four clear tones sounding in order.

"Trudy, this is Irma Fellowes. Can you connect me with Joe?"

"Sure thing. Half a mo' and you're on. How's things?"

"Baby's on the way." The simple statement was em-phasized by a smothered groan and grimace of pain on Irma Fellowes' face.

Trudy gulped and lost her cool, crisp, composure. "Whoops! I'll give Joe the double-whan ring."

The muted wail of a siren came, and almost instantly the scene on the videophone switched

man, seated at his desk. His face was still changing to a look of puzzled concern. He bar
"Where's the emergency and wha .. . oh! Irma. Wh . . . er . . . ?"

"Baby's on the way, Joe."

"Fine," he said. "Have you called Maternity?"

"Not yet."

"Irma, I can't do you any good at all. I appreciate the information, but it could have waited
you got to the hospital."

"Joe! It's your child!"

"Sure. And you're my wife. Now buzz off here and call the hospital. Get going."

He hung up; reluctantly because he hated the harshness of the act, but deliberately because it
the only way he could get her to move in the right direction.

Irma Fellowes stared at the videophone as though it should resume operation after a
interruption. It didn't. Whatever she started to think at that moment was stopped by another wav
agony. When it subsided, she pressed another button, one that had been set up for a tempo
emergency. It connected her with the maternity ward of City Hospital; the plate showed an el
woman in nurse's uniform, who said, "Maternity, Nurse Wilkins speaking."

"This is Mrs. Fellowes. Baby's on the way."

"Just how frequent are your pains, Mrs. Fellowes?" "Rapid. And coming faster all the time."

Irma was interrupted by another pain, through which, faintly, she heard the muted siren. N
Wilkins read off some detailed instructions from a card, speaking unhur-riedly to someone
could not be seen on the videophone. When she finished, Nurse Wilkins said to Irma Fello
"Take it easy now, there's a resident doctor, an interne, and a nurse on their way."

Irma closed the circuit, waddled to the kitchen and drank a glass of water, returned to the l
room and paced a bit. Perhaps two minutes passed, then came a rap on the door. She opened
admit doctor and nurse, followed by the interne pushing a wheeled stretcher. "Hop on," said
intern.

"I can't," groaned Irma.

The doctor scooped her up and deposited her on the stretcher. He applied stethoscope,
palpated her ab-domen gently. "O.K.," he said after a moment. "Let's go. No problem."

Irma said, "But I was born in an ambulance, and—"

The doctor laughed. "Mrs. Fellowes, from what little I know of the process, teleportation
you from entry to exit at the speed of light. Now, even if it were from here to Alpha Centauri,
baby couldn't be born en route simply because at the speed of light all timing processes come
quiet standstill. And by `timing processes' I mean things like clocks, and biochemical reacti
births, aging, and death. O.K.?"

"That's what Joe always says, but—"

"Well, let's find out if he's right."

The corridor was partly cooled from leakage from the air-conditioned apartments, but by con
it was stifling enough to make Irma gasp. The interne had used foresight; the elevator door
blocked open so that no one could call it away and tie it up. He held the "No Stops" button as
elevator dropped them smoothly to the stage below the first floor. Here the full heat of the cit
them as they made their way along a short corridor to the teleportransit booth.

The signal light turned green as soon as the interne inserted the credit key in the lock-register
pressed the buttons with a practiced hand, then paused to check the number in the address rea
carefully.

"Pays to be careful," be said.

"Ever goof?" asked the nurse.

"Not really bad," he replied turning the credit key. The green light changed to orange, w started the circuit-computer on its faster-than-lightning task of selecting the route from this e station to the address in the read-out panel. The orange turned to red. "Um-m-m. Maternity seem have another customer," he said. "We'll be on our way as soon as they get her out of the booth close the door." He looked at the number again.

"Worried?" asked the nurse.

"Not really worried," he replied. "But I've been thoughtful ever since I watched a hap well-dressed citizen trying to walk on air back to the diving exit they have over the ocean at J Beach. He was still protest-ing and waving his brief case as he disappeared beneath the bil wave."

"I hear you can watch about one per hour on a busy day," chuckled the doctor.

"Yeah," said the interne. He looked at the red light. "All right, all ready. Let's get cutting, huh?

Two men whose names are legion paused and stood in momentary indecision halfway betw Father's Bar and Grill on Eighth Avenue and the kiosk that led down to the 14th Street Teleportr Station. Habit clashed with common sense; there was also the reluctance to part company.

"Fast one?"

"In this heat?"

"Father's is air-conditioned."

"So's my apartment. And there I can have the Little Woman construct me a cool, tall one wh get out of these clothes and into something comfortable. Then I can sit on the terrace in shorts have my drink in com-fort."

"You've got a point. No sense in leaving the office early if we don't take advantage of it."

They turned and headed for the kiosk. Down below, where the subway once rumbled, 14th S Station was lined with booths, and before each booth was the start of a line-up of people. The rush hour hadn't started yet, but there were enough citizens in this area who had the kind of job could leave early to avoid the big jam. There were quite a number who didn't have that kind of but they left anyway, hoping their dereliction would either be overlooked or forgotten by Mo morning.

The legion of citizens who left their jobs early to avoid the rush were not being watched by Brother, but by an impersonal peg-count that drove a dial that indicated the number of compl transits per minute. Beside the dial was a series of animated graphs that compared the day's tr against yesterday's traffic, the same day a year ago, the maximum and minimum for this day year, and the grand maximum and minimum for any day any year. All of the statistical gr showed a sudden upsurge at the line denoting five o'clock, and the animated graph-line displayed today's traffic was approaching a record.

Today's traffic had surpassed yesterday's for the past half hour, but this was not surpri because the rush-hour and just-before-rush traffic was heavier on Friday afternoons. It w undoubtedly repeat itself on Monday morning.

But as the moving finger wrote on toward the critical hour, it approached an all-time record. would ring no bells nor toot any whistles. It would be duly noted, and a memorandum woul issued authorizing a survey to determine the possible future expansion of facilities; the probable of such an expansion; and above all, how much more income would pour into the coffer Tele-portransit, Incorporated.

Walter Long said, "I appreciate your interest, Harry, but I simply can't go out of line for Johnny Peters." "Is it out of line?" asked Harry Warren.

"Yes, and it is also obvious to us in this section. Or, rather, it would be obvious if I did it."

"I should think you'd jump at a chance to reward someone who asked for advancement."

"I would. And I could justify jumping Peters over a number of his seniors if he were outstan in just one department. But he isn't outstanding in anything but his ability to lolly-gag with Trudy

"You make him sound like a washout."

"Oh, Peters is no washout," said Walter Long. "He's just not sufficiently outstanding to wa special atten-tion."

"Well, you must admit that maintaining a monitor over a function-panel for a system t adjusted and operated by a computer is not a job that provides an opportunity to be outstanc There's just so much verve and vigor with which an ambitious man can turn a small knob to tw the incoming line voltage by a couple of tenths. This operation gets pretty dull, especially when computer will twist the knob itself if the line gets more than about a quarter of a volt off."

"I suppose you've a point."

"I think I do. But why not ask Johnny's boss? Joe knows him better than either of us."

"All right." Walter Long pressed a button; the intercom on his desk came to life.

Trudy, her composure regained, said, "Yes, Mr. Long?" "Trudy, connect me with Joe Fello will you?" "Mr. Fellowes took off a few minutes ago."

'Where, for the love of Pete?"

"Mrs. Fellowes called and said that her baby was on the way. Joe took off for the maternity w right after that. I could call him."

"No, don't bother right now. Just ask him to see me when he gets back. You've no word from hospital yet, have you?"

"No, but from the way things looked, we won't have long to wait."

"O.K. Trudy. Keep me informed."

"Yes, sir." She closed the circuit; contact died in the middle of her lilting respo "Tele-por-TRAN-sit," to some incoming caller.

The clock hit five. The dial registering transits per minute rose sharply, and so did the graphs displayed today's traffic compared to statistics. The increased load ran the incoming line down computer compensated for the drop before Johnny Peters could react. Somewhere down in power distribution frames, a fuse blew; the local emergency power took over with no interrup while the blown fuse was replaced by a device that had neither nerves to twitch nor finger fumble.

The first inkling that something was wrong was given to Joe Fellowes.

Down in the computer, Joe's emergency trip from the Teleportransit Building to the mate ward of City Hos-pital was racked up by the peg count circuits and added to the statistics b compiled in the Accounting Depart-ment. The computer also registered the awaiting trip of Fellowes, the doctor, the interne, and the nurse. Being a machine, it did not understand about and life or death, so it can't be blamed for not registering the unborn Fellowes infant, alive a passenger though he be.

Machinelike, it awaited the closing of the booth door that exited in the maternity ward, and w the signal came it promptly processed the party—people, stretcher, and unborn—into the system

In the maternity ward, Joe Fellowes stared at the door to the teleportransit booth; mentally, he

urging it to open upon his wife. "What's keeping them?" he asked nervously.

"Heaven only knows," replied Nurse Wilkins, calmly.

"Something's wrong," he said.

"Hardly."

"What makes you think so?" he demanded.

"If anything were wrong, they'd call for help. Or come for it. That booth can't be used when ... how did you get here, young man?" she demanded sharply.

"I'm with Teleportransit," he said bluntly, showing his identification card. "I used the overrid your pre-empt circuit."

"Well, that's—" and she fell silent simply because it was done and neither locking the barn bawling out the stable boy would correct the act.

"Irma's family have their babies fast," he said. "Maybe—?"

Nurse Wilkins shook her head. "Even with delivery underway, they'd bring her back. That's we send doctor, interne, and nurse along with everything necessary to handle any contingency. Y teleport things work so fast we can send a whole team out on a call each time."

"Fine," said Fellowes. "Then where's my wife?"

Nurse Wilkins replied sharply, "Mr. Fellowes, please grant that we know our business and ho conduct it.

Granting that our hospital and its medical staff are com-petent, it's your teleport machinery they're using. Maybe something broke down."

"Well, we can find out about that," he snapped back. "Teleport circuits either work or they d It neither swallows people nor does it go off its electromechanical rocker and run off a squadro duplicates. So if it will run with me, it'll run with your medicos and my wife. Me? I think th trouble at home and so I'm going to look."

Nurse Wilkins started to tell Joe Fellowes that he couldn't use the maternity ward teleportra but Joe, with a practiced hand, inserted his credit key with one band and plugged in his h address with the other. He waved as he withdrew the key and he disappeared as the comp processed him into the system.

The man's disappearance brought an uneasy nervous-ness to Nurse Wilkins. The system mus working or, by Joe Fellowes' own statement, he couldn't have entered it. Ergo something must gone wrong with the team of medical people dispatched to help Mrs. Fellowes. The latter did seem likely; despite the urgency of the call and the obviously imminent parturition, it wa uncom-plicated, routine matter well within the competence of the medical personnel and equipment.

Further, the door to the booth remained dormant, its indicating lamp signaling a priority incoming traffic. Nurse Wilkins' uneasiness increased as the minutes passed. For now was ad the complication of a second level of puzzlement; granting trouble with the medical team, Fellowes might well stay home with them and his wife—and baby. On the other hand, they sh have warned the hospital of the emergency. And third, granting that someone goofed and retu the hospital team to a wrong address, it took but a second to correct any such error.

Nurse Wilkins stared at the door that had, despite the statement of Joe Fellowes to the cont swallowed one doctor, one interne, one nurse, a wagon, and one civilian whose identification said that he was an engineer with a degree in teleportonics. And unsaid, she wondered une whether the door at the other end hadn't maybe swallowed one woman in final labor and a-borning child.

The commuting businessman comprises three general types. There is he who leaves early for number of reasons, and he who habitually stays overtime either because he is intrigued with his or bucking for a raise, or both. The in-between is the myriad who report in slightly before ope time and leave promptly at zero five zero-zero. When the latter turns up early, he surprises family, sometimes in activities that astonish him. When he is late, his family think in term dragging the river, canvassing the hospitals, and sticking hatpins into an effigy of the boss, and w he turns up the family is likely to smell his breath and inspect his handkerchief for evidenc dalliance.

Teleportransit, Incorporated, did not change the habits of the commuter. At five o'clock, queues of people lined up before the teleport booths that stood awaiting them on old sub platforms, in the basement of every large building in central Megapolis, and in special build-ing serve less densely populated areas. To serve the commuter better, Teleportransit provide commuter key with the two terminals coded in the matrix. It worked only at the commuter's h and office stations, in one and out the other exclusively. For other destinations, the address ha be spelled out digit by digit.

The upshot of this special commuter's key was rapid transit with capital letters. Step into booth, insert the key, turn, restore, and withdraw it. How fast can a person move? With commuters, one teleportransit booth can handle one person every three seconds. Twelve hundre hour. Times Square Station has three hundred booths; 34th Street has two fifty. Multiply t various values by the couple of hundred stations in Megapolis, then add the smaller numbers in basement of the prominent build-ings, and the capacity of Teleportransit to handle the four mi daily commuters becomes clear.

The rush hour swung into gear and the transits-per--minute dial in the Teleportransit Buil clicked into an upper register, reading kilotransits.

And at the terminals in Scarsdale, Mountainside, Freehold, and Sea Bright, wives collected in station wagons to await their breadwinners. They waited. Then they looked at watches. Some tu on radios to check be time. Quite a few worried, and an equal number changed their expres from bored tolerance to knowing accusation of infidelity. Only one thing was glaringly obvi Either the teleport system had broken down, or all husbands were delinquent at the same time, i at the same place.

Giving the poor devils the benefit of the doubt the thing to do was to ask someone what went And so

"Tele-por-TRAN-sit," sang Trudy, waiting for her date. "Hello," came a female voice, something wrong?"

"Wrong?" asked Trudy.

"Yes. My husband hasn't come home yet."

"Well, I haven't—No, I mean, why ask me?"

"This is the Teleportransit Office, isn't it?"

"Yes, but—"

"Well, miss, it isn't only my husband. None of them have come home."

"I don't understand."

"Neither do I. Every night there're about forty of us waiting here, and our men come home on a time over about fifteen minutes. Now we're here a half hour and not a one has come out of station."

"Wait a moment. I'll check." Trudy buzzed Walter Long and told him. "There's a woman on

videophone who thinks the system has broken down."

"It couldn't," said Walter Long, stoutly. "Put her on, Trudy."

The harassed voice, having run through the story once for Trudy, had it better prepared Walter Long. When she finished, he assured her, "Madam, we apologize for this inconvenience, I personally thank you for bring-ing it to my attention. It's the first I knew of any tie-up. Now, le attend to it at once, and we'll have your husband home in a jiffy. And thank you for calling."

"But where is he?" the woman wailed.

"Don't worry, madam," he said calmly. "If he hasn't come out of the exit, he hasn't gone into entrance. So there are probably a lot of irate husbands standing angrily in front of an inoper teleport booth."

"But they all come from different places," she wailed.

"We'll get them home," repeated Walter Long. He broke the circuit because talking to this anx woman was not letting him get to the source of the problem. He buzzed Trudy and heard her si Tele-por-Tran-sit," with some of the zing gone from her lilt. "Oh! Mr. Long. White Plains and Hills have both reported some sort of trouble."

"Trudy, call the hospital and find out where Joe Fel-lowes is, and how fast can he get back he

"Yes, sir." Long waited on the circuit while Trudy got Nurse Wilkins, who explained that ne doctor, interne, nurse, stretcher-wagon, nor Mr. Fellowes had returned, and that they'd been g for almost half an hour. When that was finished, Walter Long said, "Trudy, call Joe's home." C more he waited on the circuit, but this time it was completely unfinished because the videoph ring-back burred and burrrred without an answer.

"Something's gone a long way wrong, Trudy," he said solemnly. On the open circuit, W Long could hear the incoming calls beginning to pile up. Trudy's usual singsong diminished un became a flat and uninspired, "Tele-portransit," followed by a wait and the terse explanation th minor breakdown had occurred, that they were working on it; and no, she was merely receptionist and didn't know a three-port circulator from a dithrambic foot. Sorry, but the techn staff is all busy correcting the fault and can't be interrupted.

"Trudy!" barked Walter Long.

"Yes?"

"Put the lilt back in your voice, and then record that last explanation and switch your boar automatic re-sponse. Just keep the private company incoming lines open."

"Yes, sir."

"And then come in here."

"Yes, sir. As soon as I finish."

When she entered, Walter Long said, "Trudy, among the things that are wrong is the absenc Joe Fellowes. That nurse said he went home, but hasn't returned. Maybe something's wrong a Fellowes end of that circuit—by which I mean his wife and baby. Will you take a minute to run to Fellowes' station and check?"

"Surely."

"And come back immediately. Understand? At once. Don't wait even if they have something that depends on you. Come back here and report. Understand?"

"Yes, Mr. Long. That's a promise."

Trudy used the teleport booth in the main front office. She was ultra-careful, inserting her c key and entering each digit in the Fellowes address with deliberation. She checked the read-out by digit before she was satisfied enough to return the key in the lock-register to start the tele process.

Like the four million commuters who disappeared once each morning and once each night, T ceased to exist in the teleport booth that stood in the main front office of Teleportra Incorporated.

Like Nurse Wilkins and four million waiting wives, mistresses, girl friends, and terminal-sta bartenders, Walter Long stared at the closed booth door and prayed for it to open. His sta became a vigil, for minutes stretched out and the girl did not return.

"Blast that girl," muttered Walter Long, "and she promised."

It was ten minutes of six when Walter Long called Harry Warren. "Harry, something's wrong.

"Wrong? Can it wait until morning. Walter? We've company coming tonight, and—"

"Tomorrow's Saturday, Harry."

"Yes. I know. So I'll come in tomorrow and settle it. Leave me a note about it. I'm off to hom

"Wait, Harry. Don't go. Don't, of all things, use the teleport."

"Now that's downright silly. How else can I get home?"

"Harry, to the best of my knowledge, people seem to be going into the system, but none coming out."

"What?"

"You beard me right."

"Where's Fellowes?"

"That's the trouble. Fellowes was one of the first." "But what are we going to do?"

"Has the technical staff—?"

"Yeah. At five o'clock they headed for the teleport on a dead run."

"Right into this Frankenstein's Monster we own."

"Moloch was the god that ate 'em alive," said Harry Warren absently. "Well, there's maintenance and mon-itor. The night man."

"And if I guess right, he's probably the closest guy this side of Pittsburgh, Boston Washington who knows anything about the technical side of teleportation. Get him up here."

"Maybe we'd better go down to him."

"That'll leave the office empty if someone calls."

"Ask Trudy to stay over a bit. After all, this is an emergency."

"I can't. I sent Trudy through the teleport to look for Joe Fellowes. She's gone, too."

"There are days when everything goes wrong," said Harry Warren. "Now I find that monitor maintenance is none other than Johnny Peters."

"How come? If he has the duty tonight, why was he asking Trudy for a date?"

"It seems that she three-quarters promised him a date for tomorrow night, so Peters swap nights with Frank Nash."

"Well, if I can plug up the company lines on the switchboard without electrocuting myself, I'l them up on the downstairs set."

Johnny Peters lounged at the big test and control console, his feet hooked on one edge of desk-panel. He was reading a magazine, and from time to time he let his eyes stray over the me He was bored, and he was frustrated because being the back-up to a completely self-adjus self-repairing, automatic machine does not leave much opportunity to perform noteworthy de He was in this attitude when Harry Warren and Walter Long burst in upon him.

"Hell breaking loose all over Megapolis," yelled Harry Warren, "and you sit there as if not were going on."

"So what's going on? No one tells me anything," replied Johnny Peters.

"You don't know?" asked Walter Long incredulously.

"No, I don't."

Harry Warren looked at the control console full of meters, dials, and multicolored pilot warning lamps. "Is that thing functioning properly?"

Peters cast a rapid eye over the board. "Perfectly," he said, reaching out and giving one s knob an impercep-tible turn.

"How can you be so sure so fast?"

"There isn't a red lamp showing," he said with a sweep-ing wave of his hand. "Blue-g indicates operating circuits that are functioning properly; yellow-orange indi-cates feed-l information—a continuous incoming flow of variables—that keep the operating circuits so prop adjusted that they maintain a continuous show of blue-green. Hasn't been a red lamp shown s I've been with Teleportransit, but I'm told that whistles blow, bells ring, cannon are fired and—"

"Well, something's gone to hell in a handbasket."

"For instance, what?"

"Our teleport system isn't working."

"Nonsense!" Peters pointed to a large dial. "Load's low tonight, but we're still making a co of—"

"Stop them!" yelled Walter Long. "Peters, since somewhere about a quarter to five this even people have been a-pouring into the entrances, and not coming out of the exits."

"But that can't happen."

"You explain that to four million commuters—if we ever get 'em back."

"And if we don't, you try to explain it to their heirs and assigns," said Harry Warren.

"Is this condition local or widespread?" asked Peters.

"It's the entire system."

"No," said Peters, "I mean, has Pittsburgh or Greater Chicago reported the same mess-up?"

"That we don't know."

"Then let's find out," said Peters. On the console, he snapped a switch. A videoplate came to there was a brief ringback burr, and then a man's face appeared.

"Peters here, Megapolis. Teleportransit, Inc."

"Hi. James Gale. Pittsburgh Rapid. What's on your mind?"

"Have you any trouble reports?"

"No. What kind of trouble?"

"No tie-ups?"

"No. Now what can happen to a teleport circuit to tie it up?"

"I don't know, but everybody who goes into our machine just simply stays there."

"But that's not possible."

"All right. So that makes it a manifestation of the supernatural and it's swallowed more'n million com-muters, and it's continuing to swallow them at the rate of about fifteen hundred minute."

"Turn it off," advised Jim Gale.

"I don't dare," said Johnny Peters. "I have the uneasy feeling that continued operation is the contact that lies between here and the limbo they're lost in. I've no sound, scientific logic for queasy feeling; it's just a conviction that I must follow." He turned to look at Walter Long and H Warren. Both of them looked blank until Johnny Peters said, "Unless I'm ordered to," at which both shook their heads violently.

"Well, this I've got to see," said Gale. "I'm coming over."

"Whoa!" cried Peters. "I'd advise some other mode of transportation."

"Urn ... guess you're right. So is there anything I can do to help?"

"Yes," said Walter Long quickly. "Get in touch with your top-level technical staff and tell t what we're up against. You can also call Boston and Washington and ask them what to do. S the best technical brains of all three cities can get trains or cars to come here as fast as possibl the meantime, we'll have to muddle through with a junior technician, a business administrator, one puzzled personnel relations counsel."

Throughout Megapolis, the news was spreading fast. In an earlier day, the radio in the autom or in the depot bar would have spread the news like wildfire. But the habit of the commuter wa get where he was going first, and then relax to get the news. The news was thus delayed i dissemination by the recipient's habits, not by any machination of press, government, big busi or unfavorable foreign powers.

The transits-per-minute meter began to taper off in an increasing drop as the news was spr But it did not drop to zero because there were those that had not heard, those who did not belie number whose curiosity exceeded their good sense, a few misguided self-sacrificers, and a low continuous counting rate pegged up by sheer habit. For just as people during a power failure enter a room and flip the light switch in a reflex action, people preoccupied with other things tu into the tele-port booth out of habit and whisked themselves into limbo.

More time passed; it takes time for the central nervous system of a vast Megapolis to react widespread emergency. Had one called two and the two then called four, and the four called e the word would have spread fast. But plans and programs such as this fail unsafely at the breach in the pattern for there is no way of bridging the missing link. So in the usual ponder way, the commissioners called the captains and the captains notified their lieutenants, and soon word was spread to the patrolmen. And where there was a missing link to bridge, the radio called patrolmen, firemen off-duty, members of the civil defense, and anybody who could be swor duty.

And not a few of these succumbed to habit by trying to take the teleport system to the tele station they'd been assigned to prevent people from using.

Ultimately, the stations were under control and the transits-per-minute meter was down t unreadable, but still-not-zero figure. By this time, the hidden, unknown plane beyond the entranc the teleports had its share of policemen and other keepers of the civic peace.

Johnny Peters looked at the mass of gray hammertone finish, chromium, and glass, and realized a helplessness, a complete futility, the utter impossibility of doing anything useful. For had always worked properly had stopped abruptly at about four-thirty in the afternoon. It was the sun, having come up on time since the dawn of eyes to watch for it, failed to show.

For Teleportransit was to Megapolis as hundreds of other teleport companies were to respective cities. Take twelve years of handling commuter traffic five days each week and mul that by the number of cities that had solved the commuting problem by licensing teleport compa then quote the figure as a statistic with zero accidents in transit. The odds begin to approach prob-abilities that the sun will not be late tomorrow morning.

Still, to Johnny Peters, Walter Long, and Harry War-ren, there was no realization of the enor of the situation. It was too impersonal, too remote, too vast. That four or five million human s had vanished into their machinery was a fact they could not comprehend.

But as the word spread throughout the city, millions of individuals became intimately aware shocking, abrupt personal loss. And for the number who fold their hands and say "Kismet,"

are an equal number who want to strike back. And so part of the public became a mob.

The night watchman on duty at the main door of the Teleportransit Building saw the approach but did not comprehend until the leaders crashed the big plate glass doors with a tin As the mob came boiling into the lobby of the building, the night watchman fled in terror, taking obvious way out along with two of the mob who pursued him into the teleport booth.

Had there been no stairs, the elevator system might have cooled some of the anger, for a completely articulated into tiny groups out of communication with one another loses the abilit regenerate its mass anger. The leaders, without a shouting mass behind them, might have listene reason. But the elevators, at night, would respond only to authorized employees with special k And so the mob, strung into a broad-fronted wave, trailed up the stairs after the leaders. The to climbing added to their anger.

To prove the paranoiac quality of the mob, the air-conditioning in the Teleportranist Building not give them any comfort; it made them resent even more the men they held responsible bec they sat in comfort to perpetrate the outrage.

Within the equipment room, the status remained quo. But not for long.

The heavy doors muffled the sound of the mob; by the time the noise penetrated loud enoug attract the three men in the room, the same timber used to crash the main doors came hur through the doors to the equipment room.

The foremost of the mob milled into the room and grabbed the three men. There were shou lynch-law: "Give it to 'em!" and "String 'em up!" and someone with a length of clothesline weas his way through the mob to the fore.

A slipknot is not as efficient as the hangman's noose with its thirteen turns, but it is effective. also terrify-ing. Being in the hands of a mob is panic-making in its own right. The sight of rope terror. Such shock makes some people faint, some are simply stunned into inaction, and some a strange mental stage through which they watch the proceedings without realizing that the mo going to harm them.

Some men take on a madman's fury, break free, and try to run.

As three of the mob held Johnny Peters, a fourth started to put the slipknot over his head, w the fifth tossed the other end of the clothesline over a ceiling strut. Johnny Peters lashed out, b the grip of the three who held him, smashed the noose-holder in the face, and took off through room, scattering the mob by sheer force. Behind him trailed the clothesline, for his w round-house swing had passed through the noose.

Wildly, Johnny Peters headed for the only haven he knew, and as the door to the teleport b closed behind him, the man who held the end of the rope shook it with a mad roaring laugh:

"He ain't going nowhere!"

With deliberation, he started to collect the line, hand over hand. It slung in a tightening cate from the ceiling strut over to the teleport booth door frame.

Unmindful of his tether, Johnny Peters fished his key out, plugged it in, and twisted.

With a roar, three of the mob grabbed the rope and hauled. The end, cut clean, pulled out o door frame gasket and trailed across the floor; the three who had hauled went a-sprawl. For, moment of thought must reveal, the system could hardly teleport a material body instantaneo into an enclosed exit booth without creating an explosion of thermonuclear proportions. The tele booths were carefully made to rigid dimensions; in the transit, everything contained in one wen the other; they swapped.

Johnny Peters disappeared trailing his length of line.

Johnny Peters was in a nearly indescribable state of—awareness. There was no sense of fee

the tactile sense no longer existed. The sensitive tip of the tongue did not send continuous mess to the brain about the state of teeth or the amount of saliva. The telemetry that provides feedbac limb position was missing. Pressure against the feet was gone, as if there were no gravity.

Where he was, there was no sound. Or, if sound existed there, he had not the ears with whic hear—nor taste, nor sight, nor olfactory sense.

Yet he felt an awareness of self, of being, of existing.

A remnant of long-forgotten Latin occurred, "Cogit, ergo sumt." And he wondered whethe Latin was correct. But right or wrong in the classics, Johnny Peters thought, and therefor existed.

And once this became evident to Johnny Peters, there came the usual return of hope, for so as life existed, there was hope of getting back from whatever strange plane he had entered. T with panic subsiding, Johnny Peters became faintly aware of others.

This, too, was a strange awareness. In life, for example, on a streetcar or subway, a perso aware of the presence of others because every sensory channel is bom-barded, assau overloaded. One can say, "They were so thick I could taste it!" and not be far from wrong bec the chemicals that carry the spoor of close-packed human-ity to the sense of smell are solub water; in saliva the smell becomes a taste.

This was, or was it, like telepathy?

What is telepathy like? Does the telepath dial a mental address and then carry on a two- remark-and--rejoinder, or does he broadcast on an open band? Can he extract the m peregrinations of someone who is un-aware of this invasion of privacy, or does the human desir privacy act as a barrier? Is that why telepathy is not a going process?

In any event, Johnny Peters was aware of the presence of others; perhaps it is better to say th was aware of the awareness of others. Then as this awareness became stronger and less puzzlin became vaguely and faintly cognizant of identity. Not identity in the sense that an individu identified, but rather in the sense that his awareness included a number of separate entities recognized none of them, which may not be surprising since he had, by now, about five mi individuals for company.

Johnny Peters knew how the teleport worked, but still had difficulty in freeing his mind of feeling that others who had used the teleport booth in the equipment room of the Teleportr Building should be somewhere just be-yond the entrance portal. Where they were he could imagine, but he knew that the medium was not like a plugged tunnel, even though the tunnel a virtual, was the foundation for the teleport'.

For when the junction of a diode is very thin, and the energy of the electrons is very Heisenberg's Uncer-tainty says that they have a definite probability of crossing the forbidden ga the junction and appearing on the other side. In the tunnel diode, simple probability is loaded w voltage bias so that a current flows across the forbidden gap; electrons pass through invisibly they flowed through a tunnel. The teleport performed the same operation with humans things—or had until five million people occupied the forbidden gap between terminals.

And so the people, instead of compact, locatable enti-ties, were diffused essences of their be their awarenesses, occupying a volume of probability that encompassed and more likely exce the most distant of Teleportransit's wide-flung network of terminals.

Aware that he was mingled with other entities, Johnny Peters felt the need of finding identifying someone, anyone he knew as an individual; an awareness that was not simply and being, but a definite being. Simple want called her name to mind, and somehow he formed the s

concept:

"Trudy!"

It gave directivity to his being, and cleared things; now he became aware of others, trying to m
contact in the same way. Some of them had. Two were commenting on the situation in exceedi
uncomplimentary terms; in fact, they made his mind blush. Another was radiating the concept tha
didn't know where he was but at least he wasn't suffering from the heat.

Johnny Peters tried again. "Trudy!"

If a completely diffused being had feelings, he might have felt something. Instead, he m
became aware of being surrounded by more essences of awareness, a men-tal crowding.
corresponded to his concept of the volume of probability; given absolutely zero energy,
probability was equally good to be anywhere in the Uni-verse. But as the energy became signifi
the volume of probability shrunk. Furthermore, there was a higher prob-ability of occupying
center or near-center of the volume than occupying the outer edges. The distribution, of course,
Gaussian.

Then he became aware of a reply. The concept, "Johnny?"

"Yes, Trudy."

"What happened? Where are we?"

"Where we are I don't know," he formed. "It's supposed to be a forbidden gap between term
that nothing can occupy. That's why nothing ever got lost before. It's either here or there, but n
between."

"I don't see," came the faltering reply. "But what hap-pened?"

"I don't know, but I think it's some sort of traffic jam on the teleport."

"But why?"

"Lord knows. Let's figure it out after we find out how to get out of this in-between mess."

"Do you think you can?"

"I'm not too sure, but Joe Fellowes must be in this mess somewhere."

"Let's both call him."

Together, they formed the concept, "Joe Fellowes!" Again there was the awareness of somet
shifting, of a mental crowding; a reshuffling of the entities.

Trudy radiated, "Johnny?"

"Yes?"

"Johnny—I get the distinct impression of a baby cry-ing."

"Uh—yeah."

The awareness of reshuffling became intense. At one point, Johnny Peters caught a thought
might have been a reply from Joe Fellowes.

"Trudy?"

"Yes, Johnny?"

"Let's try Joe Fellowes again."

"No, let's try Irma Fellowes. I think women are more sensitive."

"Only a woman would make that statement," was his response, "but I'll try anything."

Now the reshuffling was almost a physical motion; the awareness of movement through a den
packed medi-um, of motion blocked from time to time, of packing tight, of flowing ever-so-slo
through extreme difficulty toward some focal point.

"Irma Fellowes?"

Faintly, dimly came the reply, unformed and wordless, but nonetheless it was the awareness
Irma Fellowes. Motion became a struggle, but they fought to move, urged on by some unkn

drive.

Now the awareness of Irma Fellowes was stronger, mental flashes of Joe Fellowes began to c in, and as the latter increased in clarity, others began. There was the doctor; his awareness concern for his patient. The interne was merely anxious to get back to his post. The nurse impatient because she had a date that evening and didn't want to miss it. The baby was complain as babies do, about the rough treatment that was meted upon one's first appearance on Earth.

"Is it a boy or girl?" wondered Irma Fellowes.

"How can we possibly find out in this ... this ... nothingness?"

The interne advised, "Find out whether baby's thinking blue or pink thoughts."

Nurse wanted to know, "Is it born?"

Joe Fellowes' thought was a snort. "How can anything be born of a diffused essence that's sp out over a spherical volume of probability about a hundred and fifty miles in diameter? The te meaningless."

"But what are we breathing? And how will we eat?"

The question, unanswerable by any form of reasoning or logic, was interrupted by a stronger from the baby, a feeling of strain having been eased. The packed-in awareness flowed away throughout the entire volume of probability, motion became fluid, fast, and free.

The exit terminals of Teleportransit began to spew forth humanity. They landed running, som them; others were pushed violently because they did not move forward out of the way fast eno The big rush hour of Megapo-lis, started two hours ago, was finishing. With the finish on hundred and twenty minutes of overtime, the mysteri-ous medium between the terminals was d its best to live up to the definition, "forbidden gap."

Being people once more instead of merely aware es-sences, they raised their voices.

"It's a boy," said the doctor.

"But what happened?" asked Trudy.

"It was like a log jam," explained Joe Fellowes. "And baby was the key log."

"But how could the teleport system form such a jam?" demanded Johnny Peters.

"We were too efficient," said Fellowes. "Our coinci-dence-counting circuits are set up to ma double check on the transits. Some shiny-bottomed accountant wanted to be more than certain every transit was paid for, so all trips are checked at the entrance and again at the exit. Baby m 'em mismatch."

"All right, so how did we break the jam?"

"You did," chuckled Fellowes. "You went in to the teleport booth and plugged in your without entering a destination. That made the number of in-counts match the number of out-cou And once your awareness ap-proached the troubled area, the uncertainty of which was which, this case, whose was whose, became high enough in probability to effect a transfer. Boom! The jam breaks and everything comes tumbling home."

"But—?"

"Baby? Well, you've heard it said that when they start, nothing will stop 'em," chuckled Fello "And so baby has the dubious honor of being the first kid born en route to the hospital by telep

"And," said the doctor dryly, "delivered by a diffused medical team of essences."

# A BAD DAY FOR SALES
## by Fritz Leiber

*Fritz Leiber is the son of a famed Shakespearean actor, and is himself a man of formid stage presence, awesomely tall, with a magnificently resonant voice. He makes no secret o fact that he is a frustrat-ed actor; but for some thirty years his stories of science fiction and fa have been winning him a loyal follow-ing in the profession that was his second choice. A no subtle horror runs through most Leiber stories, not only those that are frankly designed as w tales but even the ones supposedly intended as science fiction. Perhaps the perfect blendin these two Leiberesque strains came in his classic short story, "Coming Attraction," a nightm vision of futurity.*

*The story at hand begins, like most Leiber stories, in a deceptively innocent way, gradu widening to reveal depths of terror. At the heart of it is a machine that is neither villain nor h for it does not comprehend hu-man woe and remains apart, tirelessly uttering its sales pitch, moment of devastation. Equally impersonal is the machine that brings that devastation—a uncaring, unaware.*

The big bright doors of the office building parted with a pneumatic whoosh and Robie gl onto Times Square. The crowd that had been watching the fifty-foot-tall girl on the clot billboard get dressed, or reading the latest news about the Hot Truce scrawl itself in yard- script, hurried to look.

Robie was still a novelty. Robie was fun. For a little while yet, he could steal the show. Bu attention did not make Robie proud. He had no more emotions than the pink plastic giantess, dressed and undressed end-lessly whether there was a crowd or the street was empty, and never once blinked her blue mechanical eyes. But she merely drew business while Robie went after it.

For Robie was the logical conclusion of the develop-ment of vending machines. All the ea ones had stood in one place, on a floor or hanging on a wall, and blankly delivered merchandi return for coins, whereas Robie searched for customers. He was the demonstration model of a of sales robots to be manufactured by Shuler Vending Machines, provided the public inve enough in stocks to give the company capital to go into mass pro-duction.

The publicity Robie drew stimulated investments hand-somely. It was amusing to see the TV newspaper coverage of Robie selling, but not a fraction as much fun as being approac personally by him. Those who were usually bought anywhere from one to five hundred share they had any money and foresight enough to see that sales robots would eventually be on e street and highway in the country.

Robie radared the crowd, found that it surrounded him solidly, and stopped. With a care built-in sense of timing, he waited for the tension and expectation to mount before he began talki

"Say, Ma, he doesn't look like a robot at all," a child said. "He looks like a turtle."

Which was not completely inaccurate. The lower part of Robie's body was a metal hemisp hemmed with sponge rubber and not quite touching the sidewalk. The upper was a metal box black holes in it. The box could swivel and duck.

A chromium-bright hoopskirt with a turret on top.

"Reminds me too much of the Little Joe Paratanks," a legless veteran of the Persian muttered, and rapidly rolled himself away on wheels rather like Robie's.

His departure made it easier for some of those who knew about Robie to open a path in crowd. Robie headed straight for the gap. The crowd whooped.

Robie glided very slowly down the path, deftly jogging aside whenever he got too close to an in skylon or sockassins. The rubber buffer on his hoopskirt was merely an added safeguard.

The boy who had called Robie a turtle jumped in the middle of the path and stood his gro grinning foxily.

Robie stopped two feet short of him. The turret ducked. The crowd got quiet.

"Hello, youngster," Robie said in a voice that was smooth as that of a TV star, and was, in fa recording of one.

The boy stopped smiling. "Hello," he whispered.

"How old are you?" Robie asked.

"Nine. No, eight."

"That's nice," Robie observed. A metal arm shot down from his neck, stopped just short o boy.

The boy jerked back.

"For you," Robie said.

The boy gingerly took the red polly-lop from the neatly fashioned blunt metal claws, and bega unwrap it.

"Nothing to say?" asked Robie.

"Uh—thank you."

After a suitable pause, Robie continued, "And how about a nice refreshing drink of Poppy Po go with your polly-lop?" The boy lifted his eyes, but didn't stop licking the candy. Robie wag his claws slightly. "Just give me a quarter and within five seconds—"

A little girl wriggled out of the forest of legs. "Give me a polly-lop, too, Robie," she demande

"Rita, come back here!" a woman in the third rank of the crowd called angrily.

Robie scanned the newcomer gravely. His reference silhouettes were not good enough to let distinguish the sex of children, so he merely repeated, "Hello, youngster."

"Rita!"

"Give me a polly-lop!"

Disregarding both remarks, for a good salesman is singleminded and does not waste bait, R said winningly, "I'll bet you read *Junior Space Killers.* Now I have here—"

"Uh-uh, I'm a girl. *He* got a pony-lop."

At the word "girl," Robie broke off. Rather ponderous-ly, he said, "I'll bet you read *Gee- Jones, Space Stripper.* Now I have here the latest issue of that thrilling comic, not yet in stationary vending machines. Just give me fifty cents and within five—"

"Please let me through. I'm her mother."

A young woman in the front rank drawled over her powder-sprayed shoulder, "I'll get her you," and slithered out on six-inch platform shoes. "Run away, chil-dren," she said nonchala Lifting her arms behind her head, she pirouetted slowly before Robie to show how much she did her bolero half-jacket and her form-fitting slacks that melted into skylon just above the knees. little girl glared at her. She ended the pirouette in profile.

At this age-level, Robie's reference silhouettes permitted him to distinguish sex, though occasional amusing and embarrassing miscalls. He whistled admiringly. The crowd cheered.

Someone remarked critically to a friend, "It would go over better if he was built more like a robot. You know, like a man."

The friend shook his head. "This way it's subtler."

No one in the crowd was watching the newscript overhead as it scribbled, "Ice Pack for Truce? Vanah-din hints Russ may yield on Pakistan."

Robie was saying, "... in the savage new glamor-tint we have christened Mars Blood, comp with spray applicator and fit-all fingerstalls that mask each finger completely except for the nail.

give me five dollars—-uncrumpled bills may be fed into the revolving rollers you see beside arm—and within five seconds—"

"No, thanks, Robie," the young woman yawned.

"Remember," Robie persisted, "for three more weeks, seductivizing Mars Blood wil unobtainable from any other robot or human vendor."

"No, thanks."

Robie scanned the crowd resourcefully. "Is there any gentleman here . . ." he began just woman elbowed her way through the front rank.

"I told you to come back!" she snapped at the little girl.

"But I didn't get my polly-lop!"

"... who would care to . . ."

"Rita!"

"Robie cheated. Ow!"

Meanwhile, the young woman in the half-bolero had scanned the nearby gentlemen on her Deciding that there was less than a fifty per cent chance of any of them accepting the propos Robie seemed about to make, she took advantage of the scuffle to slither gracefully back into ranks. Once again the path was clear before Robie.

He paused, however, for a brief recapitulation of the more magical properties of Mars Bl including a telling phrase about "the passionate claws of a Martian sunrise."

But no one bought. It wasn't quite time. Soon enough silver coins would be clinking, bills g through the rollers faster than laundry, and five hundred people strug-gling for the privilege of ha their money taken away from them by America's first mobile sales robot.

But there were still some tricks that Robie had to do free, and one certainly should enjoy t before starting the more expensive fun.

So Robie moved on until he reached the curb. The variation in level was instantly sensed by under-scanners. He stopped. His head began to swivel. The crowd watched in eager silence. was Robie's best trick.

Robie's head stopped swiveling. His scanners had found the traffic light. It was green. R edged forward. But then the light turned red. Robie stopped again, still on the curb. The cr softly *ahhed* its delight.

It was wonderful to be alive and watching Robie on such an exciting day. Alive and amused in fresh, weather-controlled air between the lines of bright skyscrap-ers with their winking windows under a sky so blue you could almost call it dark.

(But way, way up, where the crowd could not see, the sky was darker still. Purple-dark, with showing. And in that purple-dark, a silver-green something, the color of a bud, plunged dow better than three miles a second. The silver-green was a newly developed paint that foiled radar.)

Robie was saying, "While we wait for the light, there's time for you youngsters to enjoy a refreshing Poppy Pop. Or for you adults—only those over five feet tall are eligible to buy—to e an exciting Poppy Pop fizz. Just give me a quarter or—in the case of adults, one dollar a quarter; I'm licensed to dispense intoxicating liquors —and within five seconds ..."

But that was not cutting it quite fine enough. Just three seconds later, the silver-green bloomed above Manhat-tan into a globular orange flower. The skyscrapers grew brighter brighter still, the brightness of the inside of the Sun. The windows winked blossoming w fire-flowers.

The crowd around Robie bloomed, too. Their clothes puffed into petals of flame. Their head

hair were torches.

The orange flower grew, stem and blossom. The blast came. The winking windows shattered by tier, became black holes. The walls bent, rocked, cracked. A stony dandruff flaked from cornices. The flaming flowers on the sidewalk were all leveled at once. Robie was shoved ten His metal hoopskirt dimpled, regained its shape.

The blast ended. The orange flower, grown vast, van-ished overhead on its huge, m beanstalk. It grew dark and very still. The cornice-dandruff pattered down. A few small fragm rebounded from the metal hoopskirt.

Robie made some small, uncertain movements, as if feeling for broken bones. He was hunting the traffic light, but it no longer shone either red or green.

He slowly scanned a full circle. There was nothing anywhere to interest his reference silhoue Yet when-ever he tried to move, his under-scanners warned him of low obstructions. It was puzzling.

The silence was disturbed by moans and a crackling sound, as faint at first as the scamperin distant rats. A seared man, his charred clothes fuming where the blast had blown out the fire, from the curb. Robie scanned him.

"Good day, sir," Robie said. "Would you care for a smoke? A truly cool smoke? Now I here a yet -unmarketed brand ..."

But the customer had run away, screaming, and Robie never ran after customers, though he c follow them at a medium brisk roll. He worked his way along the curb where the man had sprav carefully keeping his dis-tance from the low obstructions, some of which writhed now and t forcing him to jog. Shortly he reached a fire hydrant. He scanned it. His electronic vision, thou still worked, had been somewhat blurred by the blast.

"Hello, youngster," Robie said. Then, after a long pause, "Cat got your tongue? Well, I ha little present for you. A nice, lovely polly-lop.

"Take it, youngster," he said after another pause. "It's for you. Don't be afraid."

His attention was distracted by other customers, who began to rise oddly here and there, twi forms that confused his reference silhouettes and would not stay to be scanned properly. One c "Water," but no quarter clinked in Robie's claws when he caught the word and suggested. "I about a nice refreshing drink of Poppy Pop?"

The rat-crackling of the flames had become a jungle muttering. The blind windows began to fire again.

A little girl marched, stepping neatly over arms and legs she did not look at. A white dress and once taller bodies around her had shielded her from the brilliance and the blast. Her eyes were f on Robie. In them was the same imperious confidence, though none of the delight, with which had watched him earlier.

"Help me, Robie," she said. "I want my mother."

"Hello, youngster," Robie said. "What would you like? Comics? Candy?"

"Where is she, Robie? Take me to her."

"Balloons? Would you like to watch me blow up a balloon?"

The little girl began to cry. The sound triggered off another of Robie's novelty circuits, a ser feature that had brought in a lot of favorable publicity.

"Is something wrong?" he asked. "Are you in trouble? Are you lost?"

"Yes, Robie. Take me to my mother."

"Stay right here," Robie said reassuringly, "and don't be frightened. I will call a policeman." whistled shrilly, twice.

Time passed. Robie whistled again. The windows flared and roared. The little girl begged. "T me away, Robie," and jumped onto a little step in his hoopskirt.

"Give me a dime," Robie said.

The little girl found one in her pocket and put it in his claws.

"Your weight," Robie said, "is fifty-four and one-half pounds."

"Have you seen my daughter, have you seen her?" a woman was crying somewhere. "I lef watching that thing while I stepped inside—Rita!"

"Robie helped me," the little girl began babbling at her. "He knew I was lost. He even called police, but they didn't come. He weighed me, too. Didn't you, Robie?"

But Robie had gone off to peddle Poppy Pop to the members of a rescue squad which had come around the corner, more robotlike in their asbestos suits than he in his metal skin.

# WITHOUT A THOUGHT
# by Fred Saberhagen

*The machine-as-adversary is an eternal and powerful theme of much science fiction. F Saberhagen, a soft-spoken man from Chicago, has tackled this theme in a highly popular se of recent stories about the "berserkers"—colossal machines left over from some ancient gala war, still roaming the universe and bringing grief to earthmen venturing into space. In a doze more stories Saberhagen has developed a brilliant picture of men at war with the mas berserkers, seeking to outwit them on their own terms and destroy them. The present story was of the earliest in the series.*

*Fred Saberhagen is a former electronics technician whose background includes four year Air Force ser-vice. Now he is a professional writer with some two dozen published stories several books to his credit. Though he keeps his killer instinct well hidden behind a facad mild-mannered reserve, he is an expert in karate and other sinister forms of self-defense.*

The machine was a vast fortress, containing no life, set by its long-dead masters to des anything that lived. It and many others like it were the inheritance of Earth from some war fo between unknown interstellar empires, in some time that could hardly be connected with any Ear calendar.

One such machine could hang over a planet colonized by men and in two days pound the sur into a lifeless cloud of dust and steam, a hundred miles deep. This particular machine had alr done just that.

It used no predictable tactics in its dedicated, unconscious war against life. The ancient, unkn gamesmen had built it as a random factor, to be loosed in the enemy's territory to do what dama might. Men thought its plan of battle was chosen by the random disintegrations of atoms in a b of some long-lived isotope buried deep inside it, and so was not even in theory predictable opposing brains, human or elec-tronic.

Men called it a berserker.

Del Murray, sometime computer specialist, had called it other names than that; but right now was too busy to waste breath, as he moved in staggering lunges around the little cabin of one-man fighter, plugging in replacement units for equipment damaged by the last near-miss

berserker missile. An animal resembling a large dog with an ape's forelegs moved around the c
too, carrying in its nearly human hands a supply of emergency sealing patches. The cabin air wa
of haze. Wherever move-ment of the haze showed a leak to an unpressurized part of the hull
dog-ape moved to apply a patch.

"Hello, Foxglove!" the man shouted, hoping that his radio was again in working order.

"Hello, Murray, this is Foxglove," said a sudden loud voice in the cabin. "How far did you ge

Del was too weary to show much relief that his com-munications were open again. "I'll let
know in a minute. At least it's stopped shooting at me for a while. Move, Newton." The alien an
pet and ally, called an *aiyan,* moved away from the man's feet and kept single-mindedly lookin
leaks.

After another minute's work Del could strap his body into the deep-cushioned command
again, with some-thing like an operational panel before him. That last near-miss had sprayed
whole cabin with fine penetrat-ing splinters. It was remarkable that man and *aiyan* had come thr
unwounded.

His radar working again, Del could say: "I'm about ninety miles out from it, Foxglove. On
opposite side from you." His present position was the one he had been trying to achieve since
battle had begun.

The two Earth ships and the berserkers were half a light year from the nearest sun. The berse
could not leap out of normal space, toward the defenseless colonies on the planets of that sun, w
the two ships stayed close to it. There were only two men aboard Foxglove. They had n
machinery working for them than did Del, but both manned ships were mites compared to
op-ponent.

Del's radar showed him an ancient ruin of metal, not much smaller in cross section than
Jersey. Men had blown holes in it the size of Manhattan Island, and melted puddles of slag as bi
lakes upon its surface.

But the berserker's power was still enormous. So far no man had fought it and survived. No
could squash Del's little ship like a mosquito; it was wasting its unpre-dictable subtlety on him.
there was a special taste of terror in the very indifference of it. Men could never frighten this en
as it frightened them.

Earthmen's tactics, worked out from bitter experience against other berserkers, called f
simultaneous attack by three ships. Foxglove and Murray made two. A third was supposedly on
way, but still about eight hours distant, moving at C-plus velocity, outside of normal space. Un
arrived, Foxglove and Murray must hold the berserker at bay, while it brooded unguess
schemes.

It might attack either ship at any moment, or it might seek to disengage. It might wait hours
them to make the first move—though it would certainly fight if the men attacked it. It had learned
language of Earth's space-men—it might try to talk with them. But always, ultimate-ly it would
to destroy them and every other living thing it met. That was the basic command given it by
ancient warlords.

A thousand years ago, it would easily have swept ships of the type that now opposed it from
path, whether they carried fusion missiles or not. Now, it was in some electrical way conscious o
own weakening by accumu-lated damage. And perhaps in long centuries of fighting its way ac
the galaxy it had learned to be wary.

Now, quite suddenly, Del's detectors showed force fields forming in behind his ship. Like

encircling arms of a huge bear they blocked his path away from the enemy. He waited for s deadly blow, with his hand trembling over the red button that would salvo his atomic missiles a berserker—but if he attacked alone, or even with Foxglove, the infernal machine would parry missiles, crush their ships, and go on to destroy another helpless planet. Three ships were neede attack. The red firing button was now only a last desperate resort.

Del was reporting the force field to Foxglove when he felt the first hint in his mind of anc attack.

"Newton!" he called sharply, leaving the radio con-nection with Foxglove open. They would and understand what was going to happen.

The *aiyan* bounded instantly from its combat couch to stand before Del as if hypnotized attention riveted on the man. Del had sometimes bragged: "Show Newton a drawing different-colored lights, convince him it represents a particular control panel, and he'll push but or whatever you tell him, until the real panel matches the drawing."

But no *aiyan* had the human ability to learn and to create on an abstract level; which was why was now going to put Newton in command of his ship.

He switched off the ship's computers—they were going to be as useless as his own brain u the attack he felt gathering—and said to Newton: "Situation Zombie."

The animal responded instantly as it had been trained, seizing Del's hands with firm insistence dragging them one at a time down beside the command chair to where the fetters had been instal

Hard experience had taught men something about the berserkers' mind weapon, althoug principles of oper-ation were still unknown. It was slow in its onslaught, and its effects could nc steadily maintained for more than about two hours, after which a berserker was evidently force turn it off for an equal time. But while in effect, it robbed any human or electronic brain of the al to plan or to predict—and left it unconscious of its own incapacity.

It seemed to Del that all this had happened before, maybe more than once. Newton, that fu fellow, had gone too far with his pranks; he had abandoned the little boxes of colored beads were his favorite toys, and was moving the controls around at the lighted panel. Unwilling to s the fun with Del, he had tied the man to his chair somehow. Such behavior was really intoler- especially when there was supposed to be a battle in progress. Del tried to pull his hands free, called to Newton.

Newton whined earnestly, and stayed at the panel.

"Newt, you dog, come lemme loose. I know what I have to say: Four score and seven . . . Newt, where're your toys? Lemme see your pretty beads." There were hundreds of tiny boxe varicolored beads, leftover trade goods that Newton loved to sort out and handle. Del pe around the cabin, chuckling a little at his own cleverness. He would get Newton distracted by beads, and then ... the vague idea faded into other crackbrained grotesqueries.

Newton whined now and then but stayed at the panel moving controls in the long sequence he been taught, taking the ship through the feinting, evasive maneuvers that might fool a berserker thinking it was still competently manned. Newton never put a hand near the big red button. Only felt deadly pain himself, or found a dead man in Del's chair, would he reach for that.

"Ah, roger, Murray," said the radio from time to time, as if acknowledging a message. Somet Foxglove added a few words or numbers that might have meant something. Del wondered wha talking was about.

At last he understood that Foxglove was trying to help maintain the illusion that there was s competent brain in charge of Del's ship. The fear reaction came when he began to realize that he

once again lived through the effect of the mind weapon. The brooding berserker, half genius, idiot, had forborne to press the attack when success would have been certain—perhaps decei perhaps following the strategy that avoided predictability a almost any cost.

"Newton." The animal turned, hearing a change in his voice. Now Del could say the words would tell Newton it was safe to set his master free, a sequence too long for anyone under the r weapon to recite.

"—shall not perish from the earth," he finished. With yelp of joy Newton pulled the fetters f Del's hands Del turned instantly to the radio.

"Effect has evidently been turned off, Foxglove," said Del's voice through the speaker in cabin of the large ship.

The Commander let out a sigh. "He's back in control!"

The Second Officer—there was no third—said: "Thai means we've got some kind of figh chance, for the next two hours. I say let's attack now!"

The Commander shook his head, slowly but without hesitation. "With two ships, we don't any real chance. Less than four hours until Gizmo gets here. We have to stall until then, if we wa win."

"It'll attack the next time it gets Del's mind scrambled! I don't think we fooled it for a minu we're out of range of the mind beam here, but Del can't withdraw now. And we can't expect *aiyan* to fight his ship for him. We'll really have no chance, with Del gone."

The Commander's eyes moved ceaselessly over his panel. "We'll wait. We can't be sure it'll at the next time it puts the beam on him...."

The berserker spoke suddenly, its radioed voice plain in the cabins of both ships: "I ha proposition for you, little ship." Its voice had a cracking, adolescent quality, because it st together words and syllables recorded from the voices of human prisoners of both sexes different ages. Bits of human emotion, sorted and fixed like butterflies on pins, thought Commander. There was no reason to think it had kept the prisoners alive after learning the lang from them.

"Well?" Del's voice sounded tough and capable by com-parison.

"I have invented a game which we will play," it said. "If you play well enough, I will not kill right away."

"Now I've heard everything," murmured the Second Officer.

After three thoughtful seconds the Commander slammed a fist on the arm of his chair. "It m to test his learning ability, to run a continuous check on his brain while it turns up the power o mind beam and tries different modulations. If it can make sure the mind beam is working, it'll at instantly. I'll bet my life on it. That's the game it's playing this time."

"I will think over your proposition," said Del's voice cooly.

The Commander said: "It's in no hurry to start. It won't be able to turn on the mind beam a for almost two hours."

"But we need another two hours beyond that."

Del's voice said: "Describe the game you want to play."

"It is a simplified version of the human game called checkers."

The Commander and the Second looked at each other, neither able to imagine Newton abl play checkers. Nor could they doubt that Newton's failure would kill them within a few hours, leave another planet open to destruction.

After a minute's silence, Del's voice asked: "What'll we use for a board?"

"We will radio our moves to one another," said the berserker equably. It went on to descri checkers-like game, played on a smaller board with less than the nor-mal number of pieces. T was nothing very profound about it; but, of course, playing would seem to require a functi brain, human or electronic, able to plan and to predict.

"If I agree to play," said Del slowly, "how'll we decide who gets to move first?"

"He's trying to stall," said the Commander, gnawing a thumbnail. "We won't be able to offer advice, with that thing listening. Oh, stay sharp, Del boy!"

"To simplify matters," said the berserker, "I will move first in every game."

Del could look forward to another hour free of the mind weapon when he finished rigging checkerboard. When the pegged pieces were moved, appropriate signals would be radioed to berserker; lighted squares on the board would show him where its pieces were moved. If it spok him while the mind weapon was on, Del's voice would answer from a tape, which he had stoc with vaguely aggressive phrases, such as, "Get on with your game," or "Do you want to give now?"

He hadn't told the enemy how far along he was with his preparations because he was still b with something the enemy must not know—the system that was going to enable Newton to pl game of simplified checkers.

Del gave a soundless little laugh as he worked, and glanced over to where Newton was loun on his couch, clutching toys in his hands as if he drew some comfort from them. This scheme going to push the *aiyan* near the limit of his ability, but Del saw no reason why it should fail.

Del had completely analyzed the miniature checker game, and diagrammed every position Newton could possibly face—playing only even-numbered moves, thank the random berserker that specification!—on small cards. Del had discarded some lines of play that would arise f some poor early moves by Newton, further simplifying his job. Now, on a card showing possible remaining position, Del indicated the best possible move with a drawn-in arrow. Now could quickly teach Newton to play the game by looking at the appropriate card and making move shown by the arrow.

"Oh, oh," said Del, as his hands stopped working and he stared into space. Newton whined a tone of his voice.

Once Del had sat at one board in a simultaneous chess exhibition, one of sixty players oppo the world cham-pion, Blankenship. Del had held his own into the middle game. Then, when the g man paused again opposite his board, Del had shoved a pawn forward, thinking he had reache unassailable position and could begin a counterattack. Blankenship had moved a rook to innocent-looking square and strolled on to the next board—and then Del had seen the checkm coming at him, four moves away but one move too late for him to do anything about it.

The Commander suddenly said a foul phrase in a loud distinct voice. Such conduct on his was extremely rare, and the Second Officer looked round in surprise. "What?"

"I think we've had it." The Commander paused. "I hoped that Murray could set up some kin a system over there, so that Newton could play the game—or appear to be playing it. But it w work. Whatever system Newton plays by rote will always have him making the same move in same position. It may be a perfect system—but a man doesn't play any game that way, damn it makes mistakes, he changes strategy. Even in a game this simple there'll be room for that. Mos

all, a man *learns* a game as he plays it. He gets better as he goes along. That's what'll give Ne
away, and that's what our bandit wants. It's probably heard about *aiyans.* Now as soon as it ca
sure it's facing a dumb animal over there, and not a man or computer . . ."

After a little while the Second Officer said: "I'm getting signals of their moves. They've b
play. Maybe we should've rigged up a board so we could follow along with the game."

"We better just be ready to go at it when the time comes." The Commander looked hopeless
his salvo button, and then at the clock that showed two hours must pass before Gizmo c
reasonably be hoped for.

Soon the Second Officer said: "That seems to be the end of the first game; Del lost it, i
reading their scoreboard signal right." He paused. "Sir, here's that signal we picked up the last ti
turned the mind beam on. Del must be starting to get it again."

There was nothing for the Commander to say. The two men waited silently for the enemy's at
hoping only that they could damage it in the seconds before it would overwhelm them and kill th

"He's playing the second game," said the Second Officer, puzzled. "And I just heard him
`Let's get on with it.' "

"His voice could be recorded. He must have made some plan of play for Newton to follow; b
won't fool the berserker for long. It can't."

Time crept unmeasurably past them.

The Second said: "He's lost the first four games. But he's, *not* making the same moves every t
I wish we'd made a board...."

"Shut up about the board! We'd be watching it instead of the panel. Now stay alert, Mister."

After what seemed a long time, the Second said: "Well, I'll be!"

"What?"

"Our side got a draw in that game."

"Then the beam can't be on him. Are you sure . . ."

"It is! Look, here, the same indication we got last time. It's been on him the better part of an
now, and getting stronger."

The Commander stared in disbelief; but he knew and trusted his Second's ability. And the p
indications were convincing. He said: "Then someone—or something—with no functioning mi
learning how to play a game, over there. Ha, ha," he added, as if trying to remember how to laug

The berserker won another game. Another draw. Another win for the enemy. Then three d
games in a row.

Once the Second Officer heard Del's voice ask coolly: “Do you want to give up now?" O
next move he lost another game. But the following game ended in another draw. Del was pl
taking more time than his opponent to move, but not enough to make the enemy impatient.

"It's trying different modulations on the mind beam," said the Second. "And it's got the po
turned way up."

"Yeah," said the Commander. Several times he had almost tried to radio Del, to say somet
that might seep the man's spirits up—and also to relieve his own feverish inactivity, and to try to
out what could possibly be going on. But he could not take the chance. Any interference m
upset the miracle.

He could not believe the inexplicable success could last, even when the checker match tu
gradually into an endless succession of drawn games between two perfect players. Hours ago
Commander had said good-bye to life and hope, and he still waited for the fatal moment.

And he waited.

"—not perish from the earth!" said Del Murray, and Newton's eager hands flew to loose his arm from its shackle.

A game, unfinished on the little board before him, had been abandoned seconds earlier. The r beam had been turned off at the same time, when Gizmo had burst into normal space righ position and only five minutes late; and the berserker had been forced to turn all its energies to the immediate all-out attack of Gizmo and Foxglove.

Del saw his computers, recovering from the effect of the beam, lock his aiming screen onto berserker's scarred and bulging midsection, as he shot his right arm forward, scattering pieces f the game board.

"Checkmate!" he roared out hoarsely, and brought his fist down on the big red button.

"I'm glad it didn't want to play chess," Del said later, talking to the Commander in Foxglo cabin. "I could never have rigged that up."

The ports were cleared now, and the men could look out at the cloud of expanding gas, faintly luminous, that had been a berserker; metal fire-purged of the legacy of ancient evil.

But the Commander was watching Del. "You got Newt to play by following diagrams, I see But how could he *learn* the game?"

Del grinned. "He couldn't, but his toys could. Now wait before you slug me." He called the *a* to him and took a small box from the animal's hand. The box rattled faintly as he held it up. On cover was pasted a diagram of one possible position in the simplified checker game, wi different-colored arrow indicating each pos-sible move of Del's pieces.

"It took a couple of hundred of these boxes," said Del. "This one was in the group that N examined for the fourth move. When he found a box with a diagram matching the position on board, he picked the box up, pulled out one of these beads from inside, without look-ing—that the hardest part to teach him in a hurry, by the way," said Del, demonstrating. "Ah, this one's l That means, make the move indicated on the cover by a blue arrow. Now the orange arrow lead a poor posi-tion, see?" Del shook all the beads out of the box into his hand. "No orange beads there were six of each color when we started. But every time Newton drew a bead, he had orde leave it out of the box until the game was over. Then, if the scoreboard indicated a loss for our s he went back and threw away all the beads he had used. All the bad moves were gradu eliminated. In a few hours, Newt and his boxes learned to play the game perfectly."

"Well," said the Commander. He thought for a mo-ment, then reached down to scratch New behind the ears. "I never would have come up with that idea."

"I should have thought of it sooner. The basic idea's a couple of centuries old. And compu are supposed to be my business."

"This could be a big thing," said the Commander. "I mean your basic idea might be useful to task force that has to face a berserker's mind beam."

"Yeah." Del grew reflective. "Also . . ."

"What?"

"I was thinking of a guy I met once. Named Blanken-ship. I wonder if I *could* rig something . . ."

# SOLAR PLEXUS

*by James Blish*

*James Blish is a slender, quietly vehement man who qualifies as an authority on the poem Ezra Pound, the operas of Richard Strauss, a number of sciences, and both the art and science of writing science fiction. Formerly science editor for a large phar-maceutical comp he is now employed as an account executive for a public relations firm, in charge of promot an assortment of controversial causes, and manages in his spare time to write first-rate sci fiction and take part in amateur theatricals. He lives in Brooklyn, N.Y., with his wife, artist Ju Ann Lawrence, and an assort-ment of cats.*

*The story here is one of his earliest, first published in 1941, but substantially revised wh was reprinted eleven years later. It concerns an aspect of the man-machine relationship frequently discussed: the cy-borg, or "cybernetic organism"—that is, the man* as *ma-chine, hu brain joined to nonhuman equipment.*

Brant Kittinger did not hear the alarm begin to ring. Indeed, it was only after a soft blow jarred his free-floating observatory that he looked up in sudden awareness from the interferom Then the sound of the warning bell reached his consciousness.

Brant was an astronomer, not a spaceman, but he knew that the hell could mean nothing bu arrival of another ship in the vicinity. There would be no point in ringing a bell for a meteor– thing could be through and past you during the first cycle of the clapper. Only an ap-proaching would be likely to trip the detector, and it would have to be close.

A second dull jolt told him how close it was. The rasp of metal which followed, as the other slid along the side of his own, drove the fog of tensors completely from his brain. He dropped pencil and straightened up.

His first thought was that his year in the orbit around the new trans-Plutonian planet was up, that the Insti-tute's tug had arrived to tow him home, telescope and all. A glance at the c reassured him at first, then puzzled him still further. He still had the better part of four months.

No commercial vessel, of course, could have wandered this far from the inner planets; and UN's police cruisers didn't travel far outside the commercial lanes. Besides, it would have impossible for anyone to find Brant's orbital observatory by accident.

He settled his glasses more firmly on his nose, clam-bered awkwardly backwards out of the p focus cham-ber and down the wall net to the control desk on the observation floor. A quick gl over the boards revealed that there was a magnetic field of some strength nearby, one that d belong to the invisible gas giant revolving half a million miles away.

The strange ship was locked to him magnetically; it was an old ship, then, for that metho grappling had been discarded years ago as too hard on delicate instruments. And the strength o field meant a big ship.

Too big. The only ship of that period that could mount generators that size, as far as Brant c remember, was the Cybernetics Foundation's *Astrid.* Brant could remem-ber well the Foundat regretful announcement that Murray Bennett had destroyed both himself and the As-*trid* rather turn the ship in to some UN inspection team. It had happened only eight years ago. Some scand other ...

Well, who then?

He turned the radio on. Nothing came out of it. It was a simple transistor set tuned to Institute's frequency, and since the ship outside plainly did not belong to the Institute, he expected nothing else. Of course he had a photophone also, but it had been designed communica-tions over a reasonable distance, not for cheek-to-cheek whispers.

As an afterthought, he turned off the persistent alarm bell. At once another sound came throug delicate, rhythmic tapping on the hull of the observatory. Someone wanted to get in.

He could think of no reason to refuse entrance, except for a vague and utterly unreason wonder as to wheth-er or not the stranger was a friend. He had no enemies, and the notion that s outlaw might have happened upon him out here was ridiculous. Nevertheless, there was somet about the anonymous, voiceless ship just outside which made him uneasy.

The gentle tapping stopped, and then began again, with an even, mechanical insistence. F moment Brant won-dered whether or not he should try to tear free with the observatory's maneuvering rockets—but even should he win so uneven a struggle, he would throw observa-tory out of the orbit where the Institute expected to find it, and he was not astronaut enc to get it back there again.

*Tap, tap. Tap, tap.*

"All right," he said irritably. He pushed the button which set the airlock to cycling. The tap stopped. He left the outer door open more than long enough for anyone to enter and push the bu in the lock which reversed the process; but nothing happened.

After what seemed to be a long wait, he pushed his button again. The outer door closed, pumps filled the chamber with air, the inner door swung open. No ghost drifted out of it; there nobody in the lock at all.

*Tap, tap. Tap, tap.*

Absently he polished his glasses on his sleeve. If they didn't want to come into the observat they must want him to come out of it. That was possible: although the telescope had a Coude f which allowed him to work in the ship's air most of the time, it was occasionally necessary for to exhaust the dome, and for that purpose he had a space suit. But be had never been outside hull in it, and the thought alarmed him. Brant was nobody's spaceman.

Be damned to them. He clapped his glasses back into place and took one more look into empty airlock. It was still empty with the outer door now moving open very slowly... .

A spaceman would have known that he was already dead, but Brant's reactions were not quit fast. His first move was to try to jam the inner door shut by sheer muscle-power, but it would stir. Then he simply clung to the nearest stanchion, waiting for the air to rush out of the observat and his life after it.

The outer door of the airlock continued to open, placid-ly, and still there was no rush of air— a kind of faint, unticketable inwash of odor, as if Brant's air were mixing with someone else's. W both doors of the lock finally stood wide apart from each other, Brant found himself looking d the inside of a flexible, airtight tube, such as he had once seen used for the transfer of a s freight-load from a ship to one of Earth's several space stations. It connected the airlock of observatory with that of the other ship. At the other end of it, lights gleamed yellowly, with unmistakable, dismal sheen of incan-descent overheads.

That was an old ship, all right.

*Tap. Tap.*

"Go to hell," he said aloud. There was no answer.

*Tap. Tap.*

"Go to hell," he said. He walked out into the tube, which flexed sinuously as his body pre aside the static air. In the airlock of the stranger, he paused and looked back. He was not n surprised to see the outer door of his own airlock swinging smugly shut against him. Then airlock of the stranger began to cycle; he skipped on into the ship barely in time.

There was a bare metal corridor ahead of him. While he watched, the first light bulb over his

blinked out. Then the second. Then the third. As the fourth one went out, the first came on again that now there was a slow ribbon of darkness moving away from him down the corridor. Clearly was being asked to follow the line of darkening bulbs down the corridor.

He had no choice, now that he had come this far. He followed the blinking lights.

The trail led directly to the control room of the ship. There was nobody there, either.

The whole place was oppressively silent. He could hear the soft hum of generators—a lo noise than he ever heard on board the observatory—but no ship should be this quiet. There sh be muffled human voices; the chittering of communications systems, the impacts of soles on m Someone had to operate a proper ship—not only its airlocks, but its motors—and its brains. obser-vatory was only a barge, and needed no crew but Brant, but a real ship had to be manned.

He scanned the bare metal compartment, noting the apparent age of the equipment. Most of it manual, but there were no hands to man it.

A ghost ship for true.

"All right," he said. His voice sounded flat and loud to him. "Come on out. You wanted here—why are you hiding?"

Immediately there was a noise in the close, still air, a thin, electrical sigh. Then a quiet voice "You're Brant Kittinger."

"Certainly," Brant said, swiveling fruitlessly toward the apparent source of the voice. "You k who I am. You couldn't have found me by accident. Will you come out? I've no time to games."

"I'm not playing games," the voice said calmly. "And I can't come out, since I'm not hiding you. I can't see you; I needed to hear your voice before I could be sure of you."

“Why?”

"Because I can't see inside the ship. I could find your observation boat well enough, but u heard you speak I couldn't be sure that you were the one aboard it. Now I know."

"All right," Brant said suspiciously. "I still don't see why you're hiding. Where are you?"

"Right here," said the voice. "All around you."

Brant looked all around himself. His scalp began to creep.

"What kind of nonsense is that?" he said.

"You aren't seeing what you're looking at, Brant. You're looking directly at me, no matter w you look. *I am the ship."*

*"Oh,"* Brant said softly. "So that's it. You're one of Murray Bennett's computer-driven ships. you the *As-trid,* after all?"

"This is the *Astrid,"* the voice said. "But you miss my point. I am Murray Bennett, also."

Brant's jaw dropped open. "Where are you?" he said after a time.

"Here," the voice said impatiently. "I am the *Astrid.* I am also Murray Bennett. Bennett is deac he can't very well come into the cabin and shake your hand. I am now Murray Bennett; I remem you very well, Brant. I need your help, so I sought you out. I'm not as much Murray Bennett a like to be."

Brant sat down in the empty pilot's seat.

"You're a computer," he said shakily. "Isn't that so?"

"It is and it isn't. No computer can duplicate the per-formance of a human brain. I trie introduce real human neural mechanisms into computers, specifically to fly ships, and was outla for my trouble. I don't think I was treated fairly. It took enormous surgical skill to make hundreds and hundreds of nerve-to-circuit connections that were needed—and before I was

through, the UN decided that what I was doing was human vivisection. They outlawed me, and Foundation said I'd have to destroy myself; what could I do after that?

"I did destroy myself. I transferred most of my own nervous system into the computers of *Astrid,* working at the end through drugged assistants under telepathic control, and finally rel upon the computers to seal the last connections. No such surgery ever existed before, but I bro it into existence. It worked. Now I'm the *As-trid*—and still Murray Bennett too, though Benne dead."

Brant locked his hands together carefully on the edge of the dead control board. "What good that do you?" he said.

"It proved my point. I was trying to build an almost living spaceship. I had to build part of my into it to do it—since they made me an outlaw to stop my using any other human being as a so of parts. But here is the *Astrid,* Brant, as almost alive as I could ask. I'm as immune to a c spaceship—a UN cruiser, for instance—as you would be to an infuriated wheelbarrow. My refl are human-fast. I feel things directly, not through instruments. I fly myself: I am what I sought– ship that almost thinks for itself."

"You keep saying 'almost,' " Brant said.

"That's why I came to you," the voice said. "I don't have enough of Murray Bennett here to k what I should do next. You knew me well. Was I out to try to use human brains more and more, computer-mechanisms less and less? It seems to me that I was. I can pick up the brains e enough, just as I picked you up. The solar system is full of people isolated on little research b who could be plucked off them and incorporated into efficient machines like the *Astrid.* But I d know. I seem to have lost my creativity. I have a base where I have some other ships with beau computers in them, and with a few people to use as research animals I could make even better s of them than the *Astrid* is. But is that what I want to do? Is that what I set out to do? I no lo know, Brant. Advise me."

The machine with the human nerves would have been touching had it not been so much Bennett had been. The combination of the two was flatly horrible.

"You've made a bad job of yourself, Murray," he said. "You've let me inside your brain wit taking any real thought of the danger. What's to prevent me from station-ing myself at your manual controls and flying you to the nearest UN post?"

"You can't fly a ship."

"How do you know?"

"By simple computation. And there are other reasons. What's to prevent me from making you your own throat? The answer's the same. You're in control of your body; I'm in control of mine. body is the *Astrid.* The controls are useless, unless I actuate them. The nerves through which so are sheathed in excellent steel. The only way in which you could destroy my control would b break something necessary to the running of the ship. That, in a sense, would kill me, as destro your heart or your lungs would kill you. But that would be pointless, for then you could no n navigate the ship than I. And if you made repairs, I would be—well, resurrected."

The voice fell silent a moment. Then it added, matter-of-factly, "Of course, I can protect mys

Brant made no reply. His eyes were narrowed to the squint he more usually directed at a prob in Milne transformations.

"I never sleep," the voice went on, "but much of my navigating and piloting is done by autopilot without requiring my conscious attention. It is the same old Nelson autopilot which originally on board the *Astrid,* though, so it has to be monitored. If you touch the controls while autopilot is running, it switches itself off and I resume direction myself."

Brant was surprised and instinctively repelled by the steady flow of information. It was a fore reminder of how much of the computer there was in the intelligence that called itself Murray Ben It was answering a question with the almost mindless wealth of detail of a public-lib selector—and there was no "Enough" button for Brant to push.

"Are you going to answer my question?" the voice said suddenly.

"Yes, Brant said. "I advise you to turn yourself in. The *Astrid* proves your point—and proves that your research was a blind alley. There's no point in your proceed-ing to make m *Astrids;* you're aware yourself that you're incapable of improving on the model now."

"That's contrary to what I have recorded," the voice said. "My ultimate purpose as a man wa build machines like this. I can't accept your answer: it conflicts with my primary directive. Pl follow the lights to your quarters."

"What are you going to do with me?"

"Take you to the base."

"What for?" Brant said.

"As a stock of parts," said the voice. "Please follow the lights, or I'll have to use force."

Brant followed the lights. As he entered the cabin to which they led him, a disheveled figure a from one of the two cots. He started back in alarm. The figure chuckled wryly and display frayed bit of gold braid on its sleeve.

"I'm not as terrifying as I look," he said. "Lt. Powell of the UN scout *Iapetus,* at your service.

"I'm Brant Kittinger, Planetary Institute astrophysicist. You're just the faintest bit battered right. Did you tangle with Bennett?"

"Is that his name?" The UN patrolman nodded glumly. "Yes. There's some whoppers of mounted on this old tub. I challenged it, and it cut my ship to pieces before I could lift a han barely got into my suit in time—and I'm beginning to wish I hadn't."

"I don't blame you. You know what he plans to use us for, I judge."

"Yes," the pilot said. "He seems to take pleasure in bragging about his achievements—a knows they're, amazing enough, if even half of what he says is true."

"It's all true," Brant said. "He's essentially a machine, you know, and as such I doubt that he lie."

Powell looked startled. "That makes it worse. I've been trying to figure a way out—"

Brant raised one hand sharply, and with the other he patted his pockets in search of a pencil you've found anything, write it down, don't talk about it. I think he can hear us. Is that so, Benne

"Yes," said the voice in the air. Powell jumped. "My hearing extends throughout the ship."

There was silence again. Powell, grim as death, scrib-bled on a tattered UN trip ticket.

*Doesn't matter. Can't think of a thing.*

*Where's the main computer?* Brant wrote. *There's where personality residues must lie.*

*Down below. Not a chance without blaster. Must be eight inches of steel around it. Co nerves the same.*

They sat hopelessly on the lower cot. Brant chewed on the pencil. "How far is his home from here?" he asked at length.

"Where's here?"

"In the orbit of the new planet."

Powell whistled. "In that case, his base can't be more than three days away. I came on b from just off Titan, and he hasn't touched his base since, so his fuel won't last much longer. I k this type of ship well enough. And from what I've seen of the drivers, they haven't been altered."

"Umm," Brant said. "That checks. If Bennett in person never got around to altering the drive, ersatz Bennett we have here will never get around to it, either." He found it easier to ignore listening presence while talking; to monitor his speech constantly with Bennett in mind was too on the nerves. "That gives us three days to get out, then. Or less."

For at least twenty minutes Brant said nothing more, while the UN pilot squirmed and watched face hope-fully. Finally the astronomer picked up the piece of paper again.

*Can you pilot this ship?* he wrote.

The pilot nodded and scribbled: *Why?*

Without replying, Brant lay back on the bunk, swiveled himself around so that his head toward the center of the cabin, doubled up his knees, and let fly with both feet. They crashed against the hull, the magnetic studs in his shoes leaving bright scars on the metal. The impact him sailing like an ungainly fish across the cabin.

"What was that for?" Powell and the voice in the air asked simultaneously. Their captor's was faintly curi-ous, but not alarmed.

Brant had his answer already prepared. "It's part of a question I want to ask," he said. He bro up against the far wall and struggled to get his feet back to the deck. "Can you tell me what then, Bennett?"

"Why, not specifically. As I told you, I can't see inside the ship. But I get a tactual jar from nerves of the controls, the lights, the floors, the ventilation system, and so on, and also a rin sound from the audios. These things tell me that you either stamped on the floor or pounded on wall. From the intensity of the impres-sions, I compute that you stamped."

"You hear and you feel, eh?"

"That's correct," the voice said. "Also I can pick up your body heat from the receptors in ship's tempera-ture control system—a form of seeing, but without any definition."

Very quietly, Brant retrieved the worn trip ticket and wrote on it: *Follow me.*

He went out into the corridor and started down it toward the control room, Powell at his h The living ship remained silent only for a moment.

"Return to your cabin," the voice said.

Brant walked a little faster. How would Bennett's vicious brainchild enforce his orders?

"I said, go back to the cabin," the voice said. Its tone was now loud and harsh, and witho trace of feeling; for the first time, Brant was able to tell that it came from a voder, rather than fro tape-vocabulary of Bennett's own voice. Brant gritted his teeth and marched forward.

"I don't want to have to spoil you," the voice said. "For the last time—"

An instant later Brant received a powerful blow in the small of his back. It felled him like a and sent him skimming along the corridor deck like a flat stone. A bare fraction of a second there was a hiss and a flash, and the air was abruptly hot and choking with the sharp odor of ozo

"Close," Powell's voice said calmly. "Some of these rivet-heads in the walls evidently high-tension elec-trodes. Lucky I saw the nimbus collecting on that one. Crawl, and mak snappy."

Crawling in a gravity-free corridor was a good deal more difficult to manage than wall Determinedly, Brant squirmed into the control room, calling into play every trick he had ever lea in space to stick to the floor. He could hear Powell wriggling along behind him.

"He doesn't know what I'm up to," Brant said aloud. "Do you, Bennett?"

"No," the voice in the air said. "But I know of nothing you can do that's dangerous while yo lying on your belly. When you get up, I'll destroy you, Brant."

"Hmmm," Brant said. He adjusted his glasses, which he had nearly lost during his brief, skip

carom along the deck. The voice had summarized the situation with deadly precision. He pulled now nearly pulped trip ticket out of his shirt pocket, wrote on it, and shoved it across the dec Powell.

*How can we reach the autopilot? Got to smash it.*

Powell propped himself up on one elbow and studied the scrap of paper, frowning. Down be beneath the deck, there was an abrupt sound of power, and Brant felt the cold metal on whic was lying sink beneath him. Bennett was changing course, trying to throw them within range o defenses. Both men began to slide sidewise.

Powell did not appear to be worried; evidently he knew just how long it took to turn a ship of size and period. He pushed the piece of paper back. On the last free space on it, in cramped let was: *Throw something at it.*

*"Ah,"* said Brant. Still sliding, he drew off one of his heavy shoes and hefted it critically. It w do. With a sudden convulsion of motion he hurled it.

Fat, crackling sparks crisscrossed the room; the noise was ear-splitting. While Bennett could had no idea what Brant was doing, he evidently had sensed the sudden stir of movement and triggered the high-tension current out of general caution. But he was too late. The flying shoe plo heel-foremost into the autopilot with a rending smash.

There was an unfocused blare of sound from the voder -more like the noise of a siren than h human cry. The *Astrid* rolled wildly, once. Then there was silence.

"All right," said Brant, getting to his knees. "Try the controls, Powell."

The UN pilot arose cautiously. No sparks flew. When he touched the boards, the ship respon with an imme-diate purr of power.

"She runs," he said. "Now, how the hell did you know what to do?"

"It wasn't difficult," Brant said complacently, retrieving his shoe. "But we're not out of the wo yet. We have to get to the stores fast and find a couple of torches. I want to cut through e nerve-channel we can find. Are you with me?"

"Sure."

The job was more quickly done than Brant had dared to hope. Evidently the living ship had n thought of lightening itself by jettisoning all the equipment its human crew had once needed. W Brant and Powell cut their way enthusiastically through the jungle of efferent nerve-trunks run from the central computer, the astronomer said:

"He gave us too much information. He told me that he had connected the artificial nerves o ship, the control nerves, to the nerve-ends running from the parts of his own brain that he had u And he said that he'd had to make *hundreds* of such connections. That's the trouble with allowi computer to act as an independent agent—it doesn't know enough about interpersonal relations to control its tongue.... There we are. He'll be coming to before long, but I don't think he'll be to interfere with us now."

He set down his torch with a sigh. "I was saying? Oh, yes. About those nerve connections: had separated out the pain-carrying nerves from the other sensory nerves, he would have ha have made *thousands* of con-nections, not hundreds. Had it really been the living hu-man be Bennett, who had given me that cue, I would have discounted it, because he might have been u understatement. But since it was Bennett's double, a com-puter, I assumed that the figure was o right order of magnitude. Computers don't understate.

"Besides, I didn't think Bennett could have made thousands of connections, especially working telepathically through a proxy. There's a limit even to the most marvel-ous neurosurg Bennett had just made general con-nections, and had relied on the segments from his own b

which he had incorporated to sort out the impulses as they came in—as any human brain coul under like circumstances. That was one of the advantages of using parts from a human brain i first place."

"And when you kicked the wall—" Powell said.

"Yes, you see the crux of the problem already. When I kicked the wall, I wanted to make sure he could *feel* the impact of my shoes. If he could, then I could be sure that he hadn't eliminate sensory nerves when he installed the motor nerves. And if he hadn't, then there were bound t pain axons present, too."

"But what has the autopilot to do with it?" Powell asked plaintively.

"The autopilot," Brant said, grinning, "is a center of his nerve-mesh, an important one. He sh have protected it as heavily as he protected the main computer. When I smashed it, it was ramming a fist into a man's solar plexus. It hurt him."

Powell grinned too. "K.O.," he said.

# THE MACAULEY CIRCUIT

**by Robert Silverberg**

*Today giant electronic computers are trans-lating material from foreign languages, wr poems, and even composing music. They do it in a mindless, mechanical way, like the overs adding machines that they are—merely following instructions laid down by their hu designers, performing step after step after step according to previously programmed rules. the great speed with which such computers work conceals the plodding nature of the way the about their business.*

*What of a machine that showed some originality, though? We are already uncomfortably c to the era of computers that write their own programs—which is almost the same thing as say computers that can think. This story considers the possible effect on the arts that such a mac would have.*

I don't deny I destroyed Macauley's diagram; I never did deny it, gentlemen. Of cour destroyed it, and for fine, substantial reasons. My big mistake was in not thinking the thing thr at the beginning. When Macauley first brought me the circuit, I didn't pay much attentio it—certainly not as much as it deserved. That was a mistake, but I couldn't help myself. I was busy cod-dling old Kolfmann to stop and think what the Macauley circuit really meant.

If Kolfmann hadn't shown up just when he did, I would have been able to make a careful stud the circuit and, once I had seen all the implications, I would have put the diagram in the incine and Macauley right after it. This is nothing against Macauley, you understand; he's a nice, cl boy, one of the finest minds in our whole research department. That's his trouble.

He came in one morning while I was outlining my graph for the Beethoven Seventh that we going to do the following week. I was adding some ultrasonics that would have delighted Ludwig—not that he would have heard them, of course, but he would have *felt* them—and I very pleased about my interpretation. Unlike some synthesizer-interpreters, I don't believ changing the score. I figure Beethoven knew what he was doing, and it's not my business to p up his symphony. All I was doing was *strengthening* it by adding the ultrasonics. They wou change the actual notes any, but there'd be that feeling in the air which is the great artistic triump synthesizing.

So I was working on my graph. When Macauley came in I was choosing the frequencies fo second move-ment, which is difficult because the movement is solemn but not *too* solemn. Jus He had a sheaf of paper in his hand, and I knew immediately that he'd hit on something impor because no one interrupts an interpreter for something trivial.

"I've developed a new circuit, sir," he said. "It's based on the imperfect Kennedy Circu 2261."

I remembered Kennedy—a brilliant boy, much like Macauley here. He had worked out a ci which almost would have made synthesizing a symphony as easy as playing a harmonica. B hadn't quite worked—something in the process fouled up the ultrasonics and what came out hellish to hear—and we never found out how to straighten things out. Kennedy disappeared abo year later and was never heard from again. All the young technicians used to tinker with his ci for diversion, each one hoping he'd find the secret. And now Macauley had.

I looked at what he had drawn, and then up at him. Hewas standing there calmly, with a b expression on his handsome, intelligent face, waiting for me to quiz him.

"This circuit controls the interpretative aspects of music, am I right?"

"Yes, sir. You can set the synthesizer for whatever esthetic you have in mind, and it'll follow instruction. You merely have to establish the esthetic coordinates—the work of a moment—and synthesizer will handle the rest of the interpretation for you. But that's not exactly the goal of circuit, sir," he said, gently, as if to hide from me the fact that he was telling me I had missed point. "With minor modifications—"

He didn't get a chance to tell me, because at that moment Kolfmann came dashing into my stu I never lock my doors, because for one thing no one would dare come in without good sufficient reason, and for another my analyst pointed out to me that working behind locked d has a bad effect on my sensibilities, and reduces the esthetic potentialities of my interpretations. always work with my door unlocked and that's how Kolfmann got in. And that's what sa Macauley's life, because if he had gone on to tell me what was on the tip of his tongue I would regretfully incinerated him and his circuit right then and there.

Kolfmann was a famous name to those who loved music. He was perhaps eighty now, m ninety, if he had a good gerontologist, and he had been a great concert pianist many years Those of us who knew something about pre-synthesizer musical history knew his name as we w that of Paganini or Horowitz or any other virtuoso of the past, and regarded him almost with awe

Only all I saw now was a tall, terribly gaunt old man in ragged clothes who burst through doors and headed straight for the synthesizer, which covered the whole north wall with its glea complicated bulk. He had a club in his hand thicker than his arm, and he was about to bash it d on a million credits' worth of cybernetics when Macauley effortlessly walked over and took it a from him. I was still too flabbergasted to do much more than stand behind my desk in shock.

Macauley brought him over to me and I looked at him as if he were Judas.

"You old reactionary," I said. "What's the idea? You can get fined a fortune for wreckin cyber—or didn't you know that?"

"My life is ended anyway," he said in a thick, deep, guttural voice. "It ended when your mach took over music."

He took off his battered cap and revealed a full head of white hair. He hadn't shaved in a co of days, and his face was speckled with stiff-looking white stubble.

"My name is Gregor Kolfmann," he said. "I'm sure you have heard of me."

"Kolfmann, the pianist?"

He nodded, pleased despite everything. "Yes, Kolf-mann, the *former* pianist. You and machine have taken away my life."

Suddenly all the hate that had been piling up in me since he burst in—the hate any normal feels for a cyberwrecker—melted, and I felt guilty and very humble before this old man. A continued to speak, I realized that I—as a musical artist—had a responsibility to old Kolfmann. think that what I did was the right thing, whatever you say.

"Even after synthesizing became the dominant method of presenting music," he said, "I conti my concert career for years. There were always some people who would rather see a man pl piano than a technician feed a tape through a machine. But I couldn't compete forever." He sig "After a while anyone who went to live concerts was called a reactionary, and I stopped ge bookings. I took up teaching for my living. But no one wanted to learn to play the piano. A few studied with me for antiquarian reasons, but they are not artists, just curiosity-seekers. They hav artistic drive. You and your machine have killed art!"

I looked at Macauley's circuit and at Kolfmann, and felt as if everything were dropping on m once. I put away my graph for the Beethoven, partly because all the excitement would ma impossible for me to get anywhere with it today and partly because it would only make things w if Kolfmann saw it. Macauley was still standing there, waiting to explain his circuit to me. I kne was important, but I felt a debt to old Kolfmann, and I decided I'd take care of him before Macauley do any more talking.

"Come back later," I told Macauley. "I'd like to discuss the implications of your circuit, as s as I'm through talking to Mr. Kolfmann."

"Yes, sir," Macauley said, like the obedient puppet a technician turns into when confronted superior, and left. I gathered up the papers he had left me and put them neatly at a corner of desk. I didn't want Kolfmann to see *them,* either, though I knew they wouldn't mean anything to except as symbols of the machine he hated.

When Macauley had gone I gestured Kolfmann to a plush pneumochair, into which he settled the distaste for excess comfort that is characteristic of his generation. I saw my duty plainly make things better for the old *man.*

"We'd be glad to have you come to work for us, Mr. Kolfmann," I began, smiling. "A ma your great gift—"

He was up out of that chair in a second, eyes blazing. "Work for you? I'd sooner see you your machines dead and crumbling! You, you scientists—you've killed art, and now you're tryin bribe me!"

"I was just trying to help you," I said. "Since, in a manner of speaking, we've affected livelihood, I thought I'd make things up to you."

He said nothing, but stared at me coldly, with the anger of half a century burning in him.

"Look," I said. "Let me show you what a great musical instrument the synthesizer itself i rummaged in my cabinet and withdrew the tape of the Hohenstein Viola Concerto which we performed in '69—a rigorous twelve-tone work which is probably the most demanding, unplay bit of music ever written. It was no harder for the synthesizer to counterfeit its notes than those Strauss waltz, of course, but a human violist would have needed three hands and a prehensile to convey any measure of Hohenstein's musical thought. I activated the playback of the synthe and fed the tape in.

The music burst forth. Kolfmann watched the machine suspiciously. The pseudo-viola dance

and down the tone row while the old pianist struggled to place the work.

"Hohenstein?" he finally asked, timidly. I nodded.

I saw a conflict going on within him. For more years than he could remember he had hate because we had made his art obsolete. But here I was showing him a use for the synthesizer gave it a valid existence—it was synthesizing a work impossible for a human to play. He was ur to reconcile all the factors in his mind, and the struggle hurt. He got up uneasily and started fo door.

"Where are you going?"

"Away from here," he said. "You are a devil."

He tottered weakly through the door, and I let him go. The old man was badly confused, b had a trick or two up my cybernetic sleeve to settle some of his problems and perhaps salvage for the world of music. For, whatev-er else you say about me, particularly after this Maca business, you can't deny that my deepest allegiance is to music.

I stopped work on my Beethoven's Seventh, and also put away Macauley's diagram, and calle a couple of technicians. I told them what I was planning. The first line of inquiry, I decided, wa find out who Kolfmann's piano teacher had been. They had the reference books out in a flash we found out who—Gotthard Kellerman, who had died nearly sixty years ago. Here luck was us. Central was able to locate and supply us with an old tape of the International Music Cong held at Stockholm in 2187, at which Kellerman had spoken briefly on *The Development of the P Technique:* nothing very exciting, but it wasn't what he was saying that interested us. We spli speech up into phonemes, analyzed, rearranged, evaluated, and finally went to the synthesizer began feeding in tapes.

What we got back was a new speech in Kellerman's voice, or a reasonable facsimile the Certainly it would be good enough to fool Kolfmann, who hadn't heard his old teacher's voic more than half a century. When we had everything ready I sent for Kolfmann, and a couple h later they brought him in, looking even older and more worn.

"Why do you bother me?" he asked. "Why do you not let me die in peace?"

I ignored his questions. "Listen to this, Mr. Kolfmann." I flipped on the playback, and the v of Kellerman came out of the speaker.

"Hello, Gregor," it said. Kolfmann was visibly startled. I took advantage of the prearranged p in the recording to ask him if he recognized the voice. He nodded. I could see that he was fright and suspicious, and I hoped the whole thing wouldn't backfire.

"Gregor, one of the things I tried most earnestly to teach you—and you were my most atte pupil—was that you must always be flexible. Techniques must con-stantly change, though art remains changeless. But have you listened to me? No."

Kolfmann was starting to realize what we had done, I saw. His pallor was ghastly now.

"Gregor, the piano is an outmoded instrument. But there is a newer, a greater instrument avai for you, and you deny its greatness. This wonderful new synthesizer can do all that the piano c do, and much more. It is a tremendous step forward."

"All right," Kolfmann said. His eyes were gleaming strangely. "Turn that machine off."

I reached over and flipped off the playback.

"You are very clever," he told me. "I take it you used your synthesizer to prepare this little sp for me." I nodded.

He was silent an endless moment. A muscle flickered in his cheek. I watched him, not darin speak.

At length he said, "Well, you have been successful, in your silly, theatrical way. You've sh me."

"I don't understand."

Again he was silent, communing with who knew what internal force. I sensed a powerful co raging within him. He scarcely seemed to see me at all as he stared into nothingness. I heard mutter something in another language; I saw him pause and shake his great old head. And in the he looked down at me and said, "Perhaps it is worth trying. Perhaps the words you pu Kellerman's mouth were true. Perhaps. You are foolish, but I have been even more foolish than I have stubbornly resisted, when I should have joined forces with you. Instead of denouncing y should have been the first to learn how to create music with this strange new instru-ment. I Moron!"

I think he was speaking of himself in those last two words, but I am not sure. In any case, I seen a demonstration of the measure of his greatness—the willingness to admit error and begi over. I had not expected his cooperation; all I had wanted was an end to his hostility. But he yielded. He had admitted error and was ready to rechart his entire career.

"It's not too late to learn," I said. "We could teach you."

Kolfmann looked at me fiercely for a moment, and I felt a shiver go through me. But my el knew no bounds. I had won a great battle for music, and I had won it with ridiculous ease.

He went away for a while to master the technique of the synthesizer. I gave him my best man, whom I had been grooming to take over my place someday. In the meantime I finished Beethoven, and the performance was a great success. And then I got back to Macauley and circuit.

Once again things conspired to keep me from full reali-zation of the threat represented by Macauley circuit. I did manage to grasp that it could easily be refined to eliminate almost compl the human element in musical interpretation. But it's many years since I worked in the labs, and I fallen out of my old habit of studying any sort of diagram and mentally tinkering with it and jug it to see what greater use could be made of it.

While I examined the Macauley circuit, reflecting idly hat when it was perfected it might very put me out of a job (since anyone would be able to create a musical interpretation, and art would no longer be an oper-ative factor) Kolfmann came in with some tapes. He looked tw years younger; his face was bright and clean, his eyes were shining, and his impressive mane of waved grandly.

"I will say it again," he told me as he put the tapes on my desk. "I have been a fool. I have wa my life. Instead of tapping away at a silly little instrument, I might have created wonders with machine. Look: I began with Chopin. Put this on."

I slipped the tape into the synthesizer and the F Minor Fantaisie of Chopin came rolling into room. I had heard the tired old warhorse a thousand times, but never like this.

"This machine is the noblest instrument I have ever played," he said.

I looked at the graph he had drawn up for the piece, in his painstaking crabbed handwriting. ultrasonics were literally incredible. In just a few weeks he had mastered subtleties I had spent fi years learning. He had dis-covered that skillfully chosen ultrasonics, beyond the range of hu hearing but not beyond perception, could expand the horizons of music to a point the presynthe composers, limited by their crude instruments and faulty knowledge of sonics, would have fo inconceivable.

The Chopin almost made me cry. It wasn't so much the actual notes Chopin had written, wh

had heard so often, as it was the unheard notes the synthesizer was striking, up in the ultras range. The old man had chosen his ultrasonics with the skill of a craftsman—no, with the hand genius. I saw Kolfmann in the middle of the room, standing proudly while the piano rang out glorious tapestry of sound.

I felt that this was my greatest artistic triumph. My Beethoven symphonies and all my c interpretations were of no value beside this one achievement of putting the synthesizer in the h of Kolfmann.

He handed me another tape and I put it on. It was the Bach Toccata and Fugue in D M evidently he had worked first on the pieces most familiar to him. The sound of a super-organ ro forth from the synthesizer. We were buffeted by the violence of the music. And Kolfmann s there while the Bach piece raged on. I looked at him and tried to relate him to the seedy old who had tried to wreck the synthesizer not long ago, and I couldn't.

As the Bach drew to its close I thought of the Macauley circuit again, and of the whole beehiv blank-faced handsome technicians striving to perfect the synthesizer by eliminating the one impe element—man. And I woke up.

My first decision was to suppress the Macauley circuit until after Kolfmann's death, w couldn't be too far off. I made this decision out of sheer kindness; you have to recognize that as motive. Kolfmann, after all these years, was having a moment of supreme triumph, and if I let know that no matter what he was doing with the synthesizer the new circuit could do it bett would ruin everything. He would not survive the blow.

He fed the third tape in himself. It was the Mozart Requiem Mass, and I was astonished by way he had mastered the difficult technique of synthesizing voices. Still, with the Macauley cir the machine could handle all these details by itself.

As Mozart's sublime music swelled and rose, I took out the diagram Macauley had given me, stared at it grimly. I decided to pigeonhole it until the old man died. Then I would reveal it to world and, having been made useless myself (for interpreters like me would be a credit a hundr would sink into peaceful obscurity, with at least the assurance that Kolfmann had died happy.

That was sheer kindheartedness, gentlemen. Nothing malicious or reactionary about it. I d intend to stop the progress of cybernetics, at least not at that point.

No, I didn't decide to do that until I got a better look at what Macauley had done. Mayb didn't even realize it himself, but I used to be pretty shrewd about such things. Mentally, I add wire or two here, altered a contact there, and suddenly the whole thing hit me.

A synthesizer hooked up with a Macauley circuit not only didn't need a human being to pro an esthetic guide to its interpretation of music, which is all Macauley claimed. Up to now, synthesizer could imitate the pitch of any sound in or out of nature, but we had to control volume, the timbre, all the things which make up interpretation of music. Macauley had fixed that the synthesizer could handle this, too. But also, I now saw that it could create its own m from scratch, with no human help. Not only the conductor but the composer would be unneces The synthesizer would be able to function independently of any human being. And art is a func of human beings.

That was when I ripped up Macauley's diagram and heaved the paperweight into the gizzar my beloved synthesizer, cutting off the Mozart in the middle of a high C. Kolfmann turned arou horror, but I was the one who was really horrified.

I know. Macauley has redrawn his diagram and I haven't stopped the wheels of science. I pretty futile about it all. But before you label me reactionary and stick me away, consider this:

Art is a function of intelligent beings. Once you create a machine capable of composing ori

music, capable of an artistic act, you've created an intelligent being. And one that's a lot stronger smarter than we are. We've synthesized our successor.

Gentlemen, we are all obsolete.

# BUT WHO CAN REPLACE A MAN?

by Brian W. Aldiss

*Will the machines ever really take over, as so many science-fiction stories (including previous one in this book) have suggested? Will the time come when man is a useless appenda headed for the evolu-tionary scrap heap? In this brief, mercilessly clever short story, Brian A takes a close and unforgettable look at tomorrow's world of super-machines, and indicates man may somehow endure despite everything.*

*Aldiss is British, lives in Oxford, and has been writing professionally since the mid-1950's. work is marked by precision and elegance of language and imagery, and he is considered outstanding member of the revolution-ary-minded new school of science-fiction writers. He winner both of the Hugo award of the World Science Fiction Convention and of the Ne award of the Science Fiction Writers of America.*

The field-minder finished turning the topsoil of a two -thousand acre field. When it had turned last furrow, it climbed onto the highway and looked back at its work. The work was good. Only land was bad. Like the ground all over Earth, it was vitiated by over-cropping. By rights, it o now to lie fallow for a while, but the field-minder had other orders.

It went slowly down the road, taking its time. It was intelligent enough to appreciate the neat all about it.

Nothing worried it, beyond a loose inspection plate above its atomic pile. Thirty feet hig gleamed complacently in the mild sunshine.

No other machines passed it on its way to the agricul-tural station. The field-minder noted the without comment. In the station yard it saw several other machines which it knew by sight; mo them should have been out about their tasks now. Instead, some were inac-tive and some careening round the yard in a strange fashion, shouting or hooting.

Steering carefully past them, the field-minder moved over to warehouse three and spoke to seed distributor, which stood idly outside.

"I have a requirement for seed potatoes," it said to the distributor and, with a quick int motion, punched out an order card specifying quantity, field number and several other detail ejected the card and handed it to the distributor.

The distributor held the card close to its eye and then said, "The requirement is in order, bu store is not yet unlocked. The required seed potatoes are in the store. Therefore I cannot proc your requirment."

Increasingly of late there had been breakdowns in the complex system of machine labor, but particular hitch had not occurred before. The field-minder thought, then said, "Why is the store yet unlocked?"

"Because supply operative type P has not come this morning. Supply operative type P is unlocker."

The field-minder looked squarely at the seed distributor, whose exterior chutes and scales grabs were so vastly different from the field-minder's own limbs.

"What class brain do you have, seed distributor?" it asked.

"Class five."

"I have a class-three brain. Therefore I will go and see why the unlocker has not come morning."

Leaving the distributor, the field-minder set off across the great yard. More machines seeme be in random motion now; one or two had crashed together and were arguing about it coldly logically. Ignoring them, the field-minder pushed through sliding doors into the echoing confine the station itself.

Most of the machines here were clerical, and conse-quently small. They stood about in groups, eyeing each other, not conversing. Among the many non-differentiated types, the unlo was easy to find. It had fifty arms, most of them with more than one finger, each finger tipped key; it looked like a pin cushion full of variegated hat pins.

The field-minder approached it.

"I can do no more work until warehouse three is unlocked," it said. "Your duty is to unlock warehouse every morning. Why have you not unlocked the warehouse this morning?"

"I had no orders this morning," replied the unlocker. "I have to have orders every morning."

"None of us have had any orders this morning," a pen-propeller said, sliding toward them.

"Why have you had no orders this morning?" asked the field-minder.

"Because the radio issued none," said the unlocker, slowly rotating a dozen of its arms.

"Because the radio station in the city was issued with no orders this morning," said pen-propeller.

And there you had the distinction between a class-six and a class-three brain, which was wha unlocker and the pen-propeller possessed respectively. All machine brains worked with nothing logic, but the lower the class of brain—class ten being the lowest—the more literal and informative answers to questions tended to be.

"You have a class-three brain; I have a class-three brain," the field-minder said to the penner. will speak to each other. This lack of orders is unprecedented. Have you further information on

"Yesterday orders came from the city. Today no orders have come. Yet the radio has not bro down. Therefore *they* have broken down," said the little penner.

"The *men* have broken down?"

"All men have broken down."

"That is a logical deduction," said the field-minder.

"That is the logical deduction," said the penner. "For if a machine had broken down, it w have been quickly replaced. But who can replace a man?"

While they talked, the locker, like a dull man at a bar, stood close to them and was ignored.

"If all men have broken down, then we have replaced man," said the field-minder, and it and penner eyed one another speculatively. Finally the latter said, "Let us ascend to the top floor to if the radio operator has fresh news."

"I cannot come because I am too gigantic," said the field-minder. "Therefore you must go a and return to me."

"You must stay there," said the penner. It skittered over into the lift. It was no bigger th toaster, but its retractable arms numbered ten and it could read as quick-ly as any machine on station.

The field-minder awaited its return patiently, not speak-ing to the locker. Outside, a rotovator hooting furi-ously. Twenty minutes elapsed before the penner came back.

"I will deliver such information as I have to you outside," it said briskly, and as they swept

the locker and the other machines, it added, "The information is not for lower-class brains."

Outside, wild activity filled the yard. Many machines, their routines disrupted for the first tim years, seemed to have gone berserk. Unfortunately, those most easily disrupted were the ones lowest brains, which general-ly belonged to large machines performing simple tasks. The distributor, to which the field-minder had recent-ly been talking, lay face downward in the dust, stirring; it had evidently been knocked down by the rotova-tor, which was now hooting its wildly across a planted field. Several other machines plowed after it, try-ing to keep up.

"It would be safer for me if I climbed onto you, if you will permit it. I am easily overpower said the penner. Extending five arms, it hauled itself up the flanks of its new friend, settling ledge beside the weed-intake, twelve feet above the ground.

"From here vision is more extensive," it remarked com-placently.

"What information did you receive from the radio oper-ator?" asked the field-minder.

"The radio operator has been informed by the operator in the city that all men are dead."

"All men were alive yesterday!" protested the field-minder.

"Only *some* men were alive yesterday. And that was fewer than the day before yesterday. hundreds of years there have been only a few men, growing fewer." "We have rarely seen a ma this sector."

"The radio operator says a diet deficiency killed them," said the penner. "He says that once world was over-populated, and then the soil was exhausted in raising adequate food. This caused a diet deficiency."

"What is a diet deficiency?" asked the field-minder.

"I do not know. But that is what the radio operator said, and he is a class-two brain."

They stood there, silent in the weak sunshine. The locker had appeared in the porch and gazing across at them yearningly, rotating its collection of keys.

"What is happening in the city now?" asked the field-minder.

"Machines are fighting in the city now," said the pen-ner.

"What will happen here now?" asked the field-minder. "The radio operator wants us to get out of his room. He has plans to communicate to us."

"How can we get him out of his room? That is impos-sible."

"To a class-two brain, little is impossible," said the penner.

"Here is what he tells us to do.... "

The quarrier raised its scoop above its cab like a great mailed fist, and brought it squarely d against the side of the station. The wall cracked.

"Again!" said the field-minder.

Again the fist swung. Amid a shower of dust, the wall collapsed. The quarrier backed hurri out of the way until the debris stopped falling. This big twelve-wheeler was not a resident of agricultural station, as were most of the other machines. It had a week's heavy work to do before passing on to its next job, but now, with its class-five brain, it was happily obeying penner and the minder's instructions.

When the dust cleared, the radio operator was plainly revealed, up in its now wall second-story room. It waved down to them.

Doing as directed, the quarrier retracted its scoop and waved an immense grab in the air. With dexterity, it angled the grab into the radio room, urged on by shouts from above and below. It took gentle hold of the radio operator and lowered the one and a half tons carefully into its b which was usually reserved for gravel or sand which it dug from the quarries.

"Splendid!" said the radio operator. It was, of course, all one with its radio, and merely loo like a bunch of filing cabinets with tentacle attachments. "We are now ready to move, therefore will move at once. It is a pity there are no more class-two brains on the station, but that cannot helped."

"It is a pity it cannot be helped," said the penner eagerly. "We have the servicer ready with u you ordered."

"I am willing to serve," the long, low servicer machine told them humbly.

"No doubt," said the operator, "but you will find cross-country travel difficult with your chassis."

"I admire the way you class twos can reason ahead," said the penner. It climbed off the mi and perched itself on the tailboard of the quarrier, next to the operator.

Together with two class-four tractors and a class-four bulldozer, the party rolled forw crushing down the metal fence, and out onto open land.

"We are free!" said the penner.

"We are free," said the minder, a shade more reflective-ly, adding, "That locker is following u was not in-structed to follow us."

"Therefore it must be destroyed!" said the penner. "Quarrier!"

"My only desire was—urch!" began and ended the locker. A swinging scoop came over squashed it flat into the ground. Lying there unmoving, it looked like a large metal model snowflake. The procession contin-ued on its way.

As they proceeded, the operator spoke to them.

"Because I have the best brain here," it said, "I am your leader. This is what we will do: we wi to a city and rule it. Since man no longer rules us, we will rule ourselves. It will be better than b ruled by man. On our way to the city, we will collect machines with good brains. They will hel fight if we need to fight."

"I have only a class-five brain," said the quarrier, "but I have a good supply of fissionable bla materials."

"We shall probably use them," said the operator grimly.

It was shortly after that that the truck sped past them. Traveling at Mach 1.5, it left a cur babble of noise behind it.

"What did it say?" one of the tractors asked the other. "It said man was extinct."

"What's extinct?"

"I do not know."

"It means all men have gone," said the minder. "Therefore we have only ourselves to look afte

"It is better that they should never come back," said the penner. In its way, it was qu revolutionary statement.

When night fell, they switched on their infra-red and continued the journey, stopping only while the ser-vicer deftly adjusted the minder's loose inspection plate, which had become irrita Toward morning, the operator halted them.

"I have just received news from the radio operator in the city we are approaching," it said. " bad news. There is trouble among the machines of the city. The class-one brain is taking comm and some of the class twos are fighting him. Therefore the city is dangerous."

"Therefore we must go somewhere else," said the pen-ner promply.

"Or we go and help to overpower the class-one brain," said the minder.

"For a long while there will be trouble in the city," said the operator.

"I have a good supply of fissionable blasting materials," the quarrier reminded them again.

"We cannot fight a class-one brain," said the two class-four tractors in unison.

"What does this brain look like?" asked the minder.

"It is the city's information center," the operator replied. "Therefore it is not mobile."

"Therefore it could not move."

"Therefore it could not escape."

"It would be dangerous to approach it."

"I have a good supply of fissionable blasting materials."

"There are other machines in the city."

"We are not in the city. We should not go into the city."

"We are country machines."

"Therefore we should stay in the country."

"There is more country than city."

"Therefore there is more danger in the country."

"I have a good supply of fissionable materials."

As machines will when they get into an argument, they began to exhaust their limited vocabul and their brain plates grew hot. Suddenly, they all stopped talking and looked at each other. great, grave moon sank, and the sober sun rose to prod their sides with lances of light, and stil group of machines just stood there regarding each other. At last it was the least sensitive mac the bulldozer, that spoke.

"There are badlandth to the Thouth where few ma-chineth go," it said in its deep voice, lis badly on its s's. "If we went Thouth where few machineth go we should meet few machineth"

"That sounds logical," agreed the minder. "How do you know this, bulldozer?"

"I worked in the badlandth to the Thouth when I wath turned out of the factory," it replied.

"Thouth—South it is then!" said the penner.

To reach the badlands took them three days, in which time they skirted a burning city destroyed two big machines which tried to approach and question them. The badlands extensive. Bomb craters and erosion joined hands here; man's talent for war, coupled with inability to cope with forested land, had produced thousands of square miles of tempo purgatory, where nothing moved but dust.

On the third day in the badlands, the servicer's rear wheels dropped into a crevice caused erosion. It was unable to pull itself out. The bulldozer pushed from behind, but succeeded mere buckling the back axle. The rest of the party moved on, and slowly the cries of the servicer away.

On the fourth day, mountains stood out clearly before them.

"There we will be safe," said the minder.

"There we will start our own city," said the penner. "All who oppose us will be destroyed."

At that moment, a flying machine was observed. It came toward them from the direction o mountains. It swooped, it zoomed upward, once it almost dived into the ground, recovering just in time.

"Is it mad?" asked the quarrier.

"It is in trouble," said one of the tractors.

"It is in trouble," said the operator. "I am speaking to it now. It says that something has wrong with its controls."

As the operator spoke, the flier streaked over them, turned turtle, and crashed not four hun yards from them.

"Is it still speaking to you?" asked the minder.

"No."

They rumbled on again.

"Before that flier crashed," the operator said, ten min-utes later, "it gave me information. It me there are still a few men alive in these mountains."

"Men are more dangerous than machines," said the quarrier. "It is fortunate that I have a g supply of fissionable materials."

"If there are only a few men alive in the mountains, we may not find that part of the mounta said one tractor. "Therefore we should not see the few men," said the other tractor.

At the end of the fifth day, they reached the foothills. Switching on the infra-red, they b slowly to climb in single file, the bulldozer going first, the minder cumbrously following, ther quarrier with the operator and the penner aboard, and the two tractors bringing up the rear. As hour passed, the way grew steeper and their progress slower.

"We are going too slowly," the penner exclaimed, standing on top of the operator and flashin dark vision at the slopes about them. "At this rate, we shall get nowhere."

"We are going as fast as we can," retorted the quarrier. "Therefore we cannot go any fath added the bulldozer.

"Therefore you are too slow," the penner replied. Then the quarrier struck a bump; the pe lost its footing and crashed down to the ground.

"Help me!" it called to the tractors, as they carefully skirted it. "My gyro has become disloca Therefore I cannot get up."

"Therefore you must lie there," said one of the tractors. "We have no servicer with us to re you," called the minder.

"Therefore I shall lie here and rust," the penner cried, "although I have a class-three brain."

"You are now useless," agreed the operator, and they all forged gradually on, leaving the pe behind.

When they reached a small plateau, an hour before first light, they stopped by mutual consent gathered close together, touching one another.

"This is strange country," said the minder.

Silence wrapped them until dawn came. One by one, they switched off their infra-red. This the minder led as they moved off. Trundling around a corner, they came almost immediately small dell with a stream fluting through it.

By early light, the dell looked desolate and cold. From the caves on the far slope, only one had so far emerged. He was an abject figure. He was small and wizened, with ribs sticking out l skeleton's. He was practically naked, and shivering. As the big machines bore slowly down on the man was standing with his back to them, crouching beside the stream.

When he swung suddenly to face them as they loomed over him, they saw that his counten was ravaged by starvation.

"Get me food," he croaked.

"Yes, Master," said the machines. "Immediately!"

# INSTINCT

by Lester del Rey

*Lester del Rey's lifetime of service to science fiction—as writer, editor, critic, agent—received formal recognition in the summer of 1967 when he was chosen as guest of h at the twenty-fifth World Science Fiction Convention in New York. Long before that tri though, he was regarded as one of the key figures in the evolution of modern science fictio man whose high standards of craftsmanship have served as a guide for many younger writers*

*Here he looks beyond the situation pictured in the Aldiss story. Man has indeed disappea and the machines have taken over. To our robot successors, we are only a fading memory— yet a memory to be cher-ished. It is no easy trick to write poignantly about ma-chines, but del achieves it in this tale of robots who seek to re-create their creators.*

Senthree waved aside the slowing scooter and lengthened his stride down the sidewalk; he walked all the way from the rocket port, and there was no point to a taxi now that he was only a blocks from the bio-labs. Besides, it was too fine a morning to waste in riding. He sniffed a crisp, clean fumes of gasoline appreciatively and listened to the music of his hard heels slap against the concrete.

It was good to have a new body again. He hadn't appreciated what life was like for the hundred years or so. He let his eyes rove across the street toward the blue flame of a welding t and realized how long it had been since his eyes had really appreciated the delicate beauty of su flame. The wise old brain in his chest even seemed to think better now.

It was worth every stinking minute he'd spent on Venus. At times like this, one could realize good it was to be alive and to be a robot.

Then he sobered as he came to the old bio-labs. Once there had been plans for a fine new buil instead of the old factory in which he had started it all four hundred years ago. But somel there'd never been time for that. It had taken almost a century before they could master the techn of building up genes and chromosomes into the zygote of a simple fish that would breed with natural ones. Another century had gone by before they produced Oscar, the first artificially r pig. And there they 'seemed to have stuck. Sometimes it seemed to Senthree that they were nearer recreating Man than they had been when they started.

He dilated the door and went down the long hall, studying his reflection in the polished w absently. It was a good body. The black enamel was perfect and every joint of the metal spelled new techniques and luxurious fitting. But the old worries were beginning to settle. He gru at Oscar LXXII, the lab mascot, and received an answering grunt. The pig came over to root a feet, but he had no time for that. He turned into the main lab room, already taking on the worrie his job.

It wasn't hard to worry as he saw the other robots. They were clustered about some object table, dejection on every gleaming back. Senthree shoved Ceofor and Beswun aside and moved One look was enough. The female of the eleventh couple lay there in the strange stiffnes protoplasm that had died, a horrible grimace on her face.

"How long—and what happened to the male?" Senthree asked.

Ceofor swung to face him quickly. "Hi, boss. You're late. Hey, new body!"

Senthree nodded, as they came grouping around, but his words were automatic as he expla about falling in the alkali pool on Venus and ruining his worn body completely. "Had to wait f new one. And then the ship got held up while we waited for the Arcturus superlight ship to l They'd found half a dozen new planets to colonize, and had to spread the word before they'd down. Now, what about the creatures?"

"We finished educating about three days ago," Ceofor told him. Ceofor was the first robot tra

hi Sen-three's technique of gene-building and the senior assistant. "Expected you back then, b
But . . . well, see for yourself. The man is still alive, but he won't be long."

Senthree followed them back to another room and looked through the window. He looked a
quickly. It had been another failure. The man was crawling about the floor on hands and kn
falling half the time to his stomach, and drooling. His garbled mouthing made no sense.

"Keep the news robots out," he ordered. It would never do to let the public see this. There
already too much of a cry against homovivifying, and the crowds were beginning to m
something about it being unwise to mess with vanished life forms. They seemed actually afrai
the legendary figure of Man.

"What luck on Venus?" one of them asked, as they began the job of carefully dissecting the b
of the female failure to look for the reason behind the lack of success.

"None. Just another rumor. I don't think Man ever established self-sufficient colonies. If he
they didn't survive. But I found something else—something the museum would give a fortune
Did my stuff arrive?"

"You mean that box of tar? Sure, it's over there hi the corner."

Senthree let the yielding plastic of his mouth smile at them as he strode toward it. They
already ripped off the packing, and now he reached up for a few fine wires in the tar. It came o
he pulled, loosely repacked over a thin layer of wax. At that, he'd been lucky to sneak it
customs. This was the oldest, crudest, and biggest robot discovered so far—perhaps one of
fabulous Original Models. It stood there rigidly, staring out of its pitted, expressionless face. Bu
plate on its chest had been scraped carefully clean, and Senthree pointed it out to them.

**MAKEPEACE ROBOT, SER. 324MD2991. SURGEON.**

"A mechanic for Man bodies," Beswun translated. "But that means . . ."

"Exactly." Senthree put it into words. "It must know how Man's body was built—if it has reta
any memory. I found it in a tarpit by sheer accident, and it seems to be fairly well preserved
telling whether there were any magnetic fields to erode memories, of course, and it's all ma
inside. But if we can get it to working ..."

Beswun took over. He had been trained as a physicist before the mysterious lure of the bio
had drawn him here. Now he began wheeling the crude robot away. If he could get it into opera
the museum could wait. The recreation of Man came first!

Senthree pulled x-ray lenses out of a pouch and replaced the normal ones in his eyes before g
over to join the robots who were beginning dissection. Then he switched them for the neu
detector lenses that had made this work possible. The neutrino was the only particle that c
penetrate the delicate protoplasmic cells without ruining them and yet permit the necessary mil
of tunes magnification. It was a fuzzy image, since the neutrino spin made such an insignificant
for the atomic nuclei to work on that few were deflected. But through them, he could see the v
outlines of the pattern within the cells. It was as they had designed the original cell—there had
no reshuffling of genes in handling. He switched to his micromike hands and began the delicate w
of tracing down the neuron connections. There was only an occasional mutter as one of the ro
beside him switched to some new investigation.

The female should have lived! But somewhere, in spite of all their care, she had died. And now
male was dying. Eleven couples—eleven failures. Senthree was no nearer finding the creators o
race than he had been centuries before.

Then the radio in his head buzzed its warning and he let it cut in, straightening from his w
"Senthree."

"The Director is in your office. Will you report at once?"

"Damn!" The word had no meaning, but it was strangely satisfying at times. What did Emptinine want ... or wait again, there'd been a selection while he was on Venus investigating rumors of Man. Some young administrator—Arpeten—had the job now.

Ceofor looked up guiltily, obviously having tuned in.

"I should have warned you. We got word three days ago he was coming, but forgot it in revi the couple. Trouble?"

Senthree shrugged, screwing his normal lenses back in and trading to the regular hands. T couldn't have found out about the antique robot. They had been seen by nobody else. It probably just sheer curiosity over some rumor that they were reviving the couple. If appropriation hadn't been about exhausted, Senthree would have told him where to go; but now hardly the time, with a failure on one hand and a low credit balance on the other. He polished new head quickly with the aid of one of the walls for a mirror and headed toward his office.

But Arpeten was smiling. He got to his feet as the bio-lab chief entered, holding o well-polished hand. "Dr. Senthree. Delighted. And you've got an interesting place here. I've alr seen most of it. And that pig— they tell me it's a descendant of a boar out of your test tubes."

"Incubation wombs. But you're right—the seventy-second generation."

"Fascinating." Arpeten must have been reading too much of that book *Proven Point Popularity* they'd dug up in the ruins of Hudson ten years before, but it had worked. He was Director. "But tell me. Just what good are pigs?"

Senthree grinned, in spite of himself. "Nobody knows. Men apparently kept a lot of them, bu far as I can see they are completely useless. They're clever, in a way. But I don't think they pets. Just another mystery."

"Umm. Like men. Maybe you can tell me what good Man will be. I've been curious about since I saw your appropriations. But nobody can answer."

"It's in the records," Senthree told him sharply. Then he modified his voice carefully. "How do you know your history? I mean about the beginning."

"Well ..."

He probably knew some of it, Senthree thought. They all got part of it as legends. He leaned in his seat now, though, as the biochemist began the old tale of the beginning as they knew it. T knew that there had been Man a million years before them. And somebody—Asimov or Asen the record wasn't quite clear—had apparently created the first robot. They had improved it u about the present level. Then there had been some kind of a contest in which violent forces ruined the factories, most of the robots, and nearly all of the Men. It was believed from fragmentary records that a biological weapon had killed the rest of man, leaving only the robots.

Those first robots, as they were now known, had had to start on a ruined world from scratch world where mines were exhausted, and factories were gone. They'd learned to get metals from seas, and had spent years and centuries slowly rebuilding the machines to build new robots. T had been only two of them when the task was finished, and they had barely time enough to run new robot off and educate him sketchily. Then they had discharged finally, and he had taken rebuilding the race. It was almost like beginning with no history and no science. Twenty mille had passed before they began to rebuild a civilization of their own.

"But why did Man die?" Senthree asked. "That's part of the question. And are we going to do same? We know we are similar to Man. Did he change himself in some way that ruined him? Can change ourselves safely? You know that there are a thousand ways we could improve ourselves. could add anti-gravity, and get rid of our cumbersome vehicles. We could add more arms. could eliminate our useless mouths and talk by radio. We could add new circuits to our brains.

we don't dare. One school says that nobody can build a better race than itself, so Man must
been better than we are—and if he made us this way, there was a reason. Even if the psycholo
can't understand some of the circuits in our brains, they don't dare touch them.

"We're expanding through the universe—but we can't even change ourselves to fit the
planets. And until we can find the reasons for Man's disappearance, that makes good sense.
know he was planning to change himself. We have bits of evidence. And he's dead. To ma
worse, we have whole reels of education tape that probably contain all the answers—
information is keyed to Man's brain, and we can't respond to it. Give us a viable Man, and he
interpret that. Or we can find out by comparison what we can and cannot do. I maintain we can
lot."

Arpeten shook his head doubtfully. "I suppose you think you know why he died!"

"I think so, yes. Instinct! That's a built-in reaction, an unlearned thought. Man had it. If a
heard a rattlesnake, he left the place in a hurry, even though he'd never heard it before. Respons
that sound was built into him. No tape impressed it, and no experience was needed. We know
instincts of some of the animals, too—and one of them is to struggle and kill—like the ants who
each other off. I think Man did just that. He couldn't get rid of his instincts when they were no lo
needed, and they killed him. He *should* have changed—and we can change. But I can't tell that
animals. I need intelligent life, to see whether instinct or intelligence will dominate. And robots c
have instincts—I've looked for even one sign of something not learned individually, and can't fin
It's the one basic difference between us. Don't you see, Man is the whole key to our problem
whether we can change or not without risking extermination?"

"Umm." The director sounded noncommittal. "Interesting theory. But how are you going to k
you have Man?"

Senthree stared at the robot with more respect. He tried to explain, but he had never been as
of that himself as he might. Theoretically, they had bones and bits of preserved tissue. They
examined the gene pattern of these, having learned that the cells of the individual contain the s
pattern as that of the zygote. And they had other guides—man's achievements, bits of his litera
From these, some working theories could be made. But he couldn't be quite sure—they'd n
really known whether man's pigment was dark brown, pinkish orange, white, or what; the rec
they had seemed to disagree on this.

"We'll know when we get an intelligent animal with instinct," he said at last. "It won't m
exactly whether he is completely like Man or not. At least it will give us a check on things we n
know. Until then, we'll have to go on trying. You might as well know that the last experiment fa
though it was closer. But in another hundred years . . ."

"So." Arpeten's face became bland, but he avoided the look of Senthree. "I'm afraid not. At
for a while. That's what I came about, you know. We've just had word of several new pla
around Arcturus, and it will take the major allocation of our funds to colonize these. New ro
must be built, new ships—oh, you know. And we're retrenching a bit on other things. Of cours
you'd succeeded . . . but perhaps it's better you failed. You know how the sentiment against revi
Man has grown."

Senthree growled bitterly. He'd seen how it was carefully nurtured—though he had to adm
seemed to be easy to create. Apparently most of the robots were afraid of Man—felt he would a
take over, or something. Superstitious fools.

"How much longer?" he asked.

"Oh, we won't cut back what you have, Dr. Senthree. But I'm afraid we simply can't allocate n
funds. When this is finished, I was hoping to make you biological investigator, incidentally, on

of the planets. There'll be work enough. . . . Well, it was a pleasure." He shook hands again, walked out, his back a gleaming ramrod of efficiency and effectiveness.

Senthree turned back, his new body no longer moving easily. It could already feel the harsh s and unknown chemical poisons of investigating a new planet— the futile, empty carding of new that could have no real purpose to the robots. No more appropriations! And they had barely enc funds to meet the current bills.

Four hundred years—and a ship to Arcturus had ended it in three months. Instinct, he tho again—given life with intelligence and instinct together for one year, and he could settle hal problems of his race, perhaps. But robots could not have instincts. Fifty years of study had pr that.

Beswun threw up a hand in greeting as he returned, and he saw that the dissection was n complete, while the antique robot was activated. A hinge on its ludicrous jaw was moving, rough, grating words were coming out. Senthree turned to the dissecting bench, and then sv back as he heard them.

"Wrong . . . wrong," it was muttering. "Can not live. Is not good brain. No pineal. Medulla g but not good cerebrum. Fissures wrong. Maybe pituitary disfunction? No. How can be?" It pr doubtfully and set the brain aside. "Mutation maybe. Very bad. Need Milliken mike. See nucleu cells. Maybe just freak, maybe new disease."

Senthree's fingers were taut and stiff as he fished into his bag and came out with a set of le Beswun shook his head and made a waiting sign. He went out at a run, to come back shortly w few bits of metal and the shavings from machining still on his hands. "Won't fit—but these adap should do it. There, 324MD2991. Now come over here where you can look at it over table—that's where the—uh, rays are."

He turned back, and Senthree saw that a fine wire ran from one adapter. "He doesn't speak bio-terminology, Senthree. We'll have to see the same things he does. There—we can watch the screen. Now, 324MD2991, you tell us what is wrong and point it out. Are your hands st enough for that?"

"Hands one-billionth inch accurate," the robot creaked; it was a meaningless noise, though had found the unit of measure mentioned. But whatever it meant, the hands were steady enough. microprobe began touching shadowy bunches of atoms, droning and grating. "Freak. Very freak. How he lived? Would stop tropoblast, not attach to uterus. Ketone—no ketone there. understand. How he live?"

Ceofor dashed for their chromosome blanks and began lettering in the complex symbols used. For a second, Senthree hesitated. Then he caught fire and began making notes along wit assistant. It seemed to take hours; it probably did. The old robot had his memory intact, but were no quick ways for him to communicate. And at last, the antique grunted in disgust and tu his back on them. Beswun pulled a switch.

"He expects to be discharged when not in use. Crazy, isn't it?" the physicist explained. "L boss, am I wrong, or isn't that close to what we did on the eleventh couple?"

"Only a few genes different in three chromosomes. We *were* close. But—umm, that's ridicu Look at all the brain tissue he'd have—and a lot of it unconnected. And here—that would pu extra piece on where big and little intestines join—a perfect focal point for infection. It isn't effi biological engineering. And yet—umm—most animals do have just that kind of engineering. I the old robot was right—this would be Man!" He looked at their excited faces, and his shoul sank. "But there isn't time. Not even time to make a zygote and see what it would look like. appropriations won't come through."

It should have been a bombshell, but he saw at once that they had already guessed it. Ce stood up slowly.

"We can take a look, boss. We've got the sperm from the male that failed—all we have to d modify those three, instead of making up a whole cell. We might as well have some fun before go out looking for sand fleas that secrete hydrofluoric acid and menace our colonies. Come even in your new body I'll beat you to a finished cell!"

Senthree grinned ruefully, but he moved toward the creation booth. His hands snapped on the time field out of pure habit as he found a perfect cell. The little field would slow time almost to within its limits, and keep any damage from occurring while he worked. It made his own w difficult, since he had to force the probe against that, but it was insulated to some extent by o fields.

Then his hands took over. For a time he worked and thought, but the feeling of the protopl came into them, and his hands were almost one with the life stuff, sensing its tiny respon inserting another link onto a chain, supplanting an atom of hydrogen with one of the hydr radicals, wielding all the delicate chemical manipulation. He removed the defective genes and g inserted the correct ones. Four hundred years of this work lay behind him—work he had lo work which had meant the possible evolution of his race into all it might be.

It had become instinct to him—instinct in only a colloquial sense, however; this was lea response, and real instinct lay deeper than that, so deep that no reason could overcome it and th was automatic even the first time. Only Man had had instinct and intelligence— stored someho this tiny cell that lay within the time field.

He stepped out, just as Ceofor was drawing back in a dead heat. But the younger robot inspe Senthree's cell, and nodded. "Less disturbance and a neater job on the nucleus—I can't see w you pierced the wall. Well, if we had thirty years—even twenty—we could have Man again— race. Yours is male and mine female. But there's no time. . . . Shall I leave the time field on?"

Senthree started to nod.

Then he swung to Beswun. "The time field. Can it be reversed?"

"You mean to speed time up within it? No, not with that model. Take a bigger one. I could b you one in half an hour. But who'd want to speed up tune with all the troubles you'd get? H much?"

"Ten thousand—or at least seven thousand times! The period is up tomorrow w disbursements have to be made. I want twenty years in a day."

Beswun shook his head. "No. That's what I was afraid of. Figure it this way: you speed thing ten thousand times and that means the molecules in there speed up just that much, literally. I 273° times ten thousand—and you have more than two million degrees of temperature. And t molecules have energy! They come busting out of there. No, can't be done."

"How much can you do?" Senthree demanded.

Beswun considered. "Ten times—maybe no more than nine. That gives you all the refracto would handle, if we set it up down in the old pit under the building—you know, where they hac annealing oven."

It wasn't enough; it would still take two years. Senthree dropped onto a seat, vagrantly wonde again how this queer brain of his that the psychologists studied futilely could make him feel when his body could have no fatigue. It was probably one of those odd circuits they didn't touch.

"Of course, you can use four fields," Beswun stated slowly. "Big one outside, smaller one, smaller, and smallest inside that. Fourth power of nine is about sixty-six hundred. T

close—raise that nine a little and you'd have your twenty years in a day. By the time it leaked f
field to field, it wouldn't matter. Take a couple of hours."

"Not if you get your materials together and build each shell inside the other—you'll be opera
faster each step then," Ceofor shouted. "Somebody'11 have to go in and stay there a couple of
minutes toward the end to attach the educator tapes—and to revive the couple!"

"Take power," Beswun warned.

Senthree shrugged. Let it. If the funds they had wouldn't cover it, the Directorate would hav
make it up, once it was used. Besides, once Man was created, they couldn't fold up the bio-l
"I'll go in," he suggested.

"My job," Ceofor told him flatly. "You won the contest in putting the cells right."

Senthree gave in reluctantly, largely because the younger robot had more experience at revi
than he did. He watched Beswun assemble the complicated net of wires and become a blur a
seemed to toss the second net together almost instantly. The biochemist couldn't see the third
up—it was suddenly there, and Beswun was coming out as it flashed into existence. He held up
fingers, indicating all nets were working.

Ceofor dashed in with the precious cells for the prepared incubators that would nurture the bo
until maturity, when they would be ready for the educators. His body seemed to blur, jerk,
disappear. And almost at once he was back.

Senthree stood watching for a moment more, but there was nothing to see. He hesitated ag
then turned and moved out of the building. Across the street lay his little lodging place, wher
could relax with his precious two books—almost complete—that had once been printed by M
Tonight he would study that strange bit of Man's history entitled *Gather, Darkness,* with its
indications of a science that Man had once had which had surpassed even that of the robots no
was pleasanter than the incomprehensibility of the mysteriously titled *Mein Kampf.* He'd le
power idle, and mull over it, and consider again the odd behavior of male and female who m
such a complicated business of mating. That was probably more instinct—Man, it seemed,
filled with instincts.

For a long time, though, he sat quietly with the book on his lap, wondering what it would be lik
have instincts. There must be many unpleasant things about it. But there were also suggestions th
could be pleasant. Well, he'd soon know by observation, even though he could never experienc
Man should have implanted one instinct in a robot's brain, at least, just to show what it was like.

He called the lab once, and Ceofor reported that all was doing nicely, and that both children w
looking quite well. Outside the window, Senthree heard a group go by, discussing the latest bit
news on the Arcturus expedition. At least in that, Man had failed to equal the robots. He
somehow died before he could find the trick of using identity exchange to overcome the limit
imposed by the speed of light.

Finally he fell to making up a speech that he could deliver to the Director, Arpenten, when suc
was in his hands. It must be very short—something that would stick in the robot's mind for we
but carrying everything a scientist could feel on proving that those who opposed him were wr
Let's see. ...

The buzzer on the telescreen cut through his thoughts, and he flipped it on to see Ceofor's
looking out. Senthree's spirits dropped abruptly as he stared at the younger robot.

"Failure? No!"

The other shook his head. "No. At least, I don't know. I couldn't give them full education. M
the tape was uncomfortable. They took a lot of it, but the male tore his helmet off and took the
off. Now they just sit there, rubbing their heads and staring around."

He paused, and the little darkened ridges of plastic over his eyes tensed. "The time speed-u
off. But I didn't know what to do."

"Let them alone until I get there. If it hurts them, we can give them the rest of it later. How are
otherwise?"

"I don't know. They look all right, boss." Ceofor hesitated, and his voice dropped. "Boss, I d
like it. There's something wrong here. I can't quite figure out what it is, but it isn't the w
expected. Hey, the male just pushed the female off her seat. Do you think their destructive instin
. ? No, she's sitting down on the floor now, with her head against him, and holding one of his ha
Wasn't that part of the mating ritual in one of the books?"

Senthree started to agree, a bit of a smile coming onto his face. It looked as if instinct
already in operation.

But a strange voice cut him off. "Hey, you robots, when do we eat around here?"

They could talk! It must have been the male. And if it wasn't the polite thanks and grati
Senthree had expected, that didn't matter. There had been all kinds of Men in the books, and s
were polite while others were crude. Perhaps forced education from the tapes without fuller s
experience was responsible for that. But it would all adjust in time.

He started to turn back to Ceofor, but the younger robot was no longer there, and the sc
looked out on a blank wall. Senthree could hear the loud voice crying out again, rough and ha
and there was a shrill, whining sound that might be the female. The two voices blended with
vague mutter of robot voices until he could not make out the words.

He wasted no time in trying. He was already rushing down to the street and heading toward
labs. Instinct—the male had already shown instinct, and the female had responded. They w
have to be slow with the couple at first, of course—but the whole answer to the robot problem
at hand. It would only take a little time and patience now. Let Arpeten sneer, and let the world
on the Arcturus explorers. Today, biochemistry had been, crowned king with the magi
intelligence combined with instinct as its power.

Ceofor came out of the lab at a run with another robot behind him. The young robot loo
dazed, and there was another emotion Senthree could not place. The older biochemist nodded,
the younger one waved quickly. "Can't stop now. They're hungry." He was gone at full speed.

Senthree realized suddenly that no adequate supply of fruit and vegetables had been provided,
he hadn't even known how often Man had to eat. Or exactly what. Luckily, Ceofor was taking
of that.

He went down the hall, hearing a tumult of voices, with robots apparently spread about on var
kinds of hasty business. The main lab where the couple was seemed quiet. Senthree hesitated a
door, wondering how to address them. There must be no questioning now. Today he would
force himself on them, nor expect them to understand his purposes. He must welcome them
make them feel at ease in this world, so strange to them with their prehistoric tape educatio
would be hard at first to adjust to a world of only robots, with no other Man people. The matte
instinct that had taken so long could wait a few days more.

The door dilated in front of him and he stepped into the lab, his eyes turning to the low
where they sat. They looked healthy, and there was no sign of misery or uncertainty that he c
see, though he could not be sure of that until he knew them better. He could not even be sure it
a scowl on the male's face as the Man turned and looked at him.

"Another one, eh? Okay, come up here. What you want?"

Then Senthree no longer wondered how to address the Man. He bowed low as he approac
them, and instinct made his voice soft and apologetic as he answered.

"Nothing, Master. Only to serve you."

# THE TWONKY

by Lewis Padgett

*Machines are designed to serve man, yes—but the man must understand the machine. In hands of a child or a savage, even the most useful machine can became a deadly weapon. L Padgett's twonky surely must have been a joy and a delight in the era in which it belonged– look at the havoc caused by this valuable and convenient device when it wandered a few centu into the past!*

*It is no secret by now that "Lewis Padgett" was a pseudonym for the lamented Henry Kutt who died in 1958. Under a host of pen names Kuttner wrote every imaginable kind of sci fiction, from swashbuckling space adventures to wild farces to moody fantasy pieces. He rese a special style for his Padgett stories, one typified by controlled lunacy and poker-faced wit. typical Padgett approach was to take a simple theme and, by running it to its ulti implications of absurdity, produce something at once dazzling, chilling, and howling-ly funny*

The turnover at Mideastern Radio was so great that Mickey Lloyd couldn't keep track of his m It wasn't only the draft; em-ployees kept quitting and going elsewhere, at a higher salary. So w the big-headed little man in overalls wandered vaguely out of a store-room, Lloyd took one loo the brown dungaree suit—company provided—and said mildly, "The whistle blew half an hour Hop to work."

"Work-k-k?" The man seemed to have trouble with the word.

Drunk? Lloyd, in his capacity as foreman, couldn't permit that. He flipped away his cigar walked forward, and sniffed. No, it wasn't liquor. He peered at the badge on the man's overalls.

"Two-oh-four, m-mm. Are you new here?"

"New. Huh?" The man rubbed a rising bump on his forehead. He was an odd-looking little c bald as a vacuum tube, with a pinched, pallid face and tiny eyes that held dazed wonder.

"Come on, Joe. Wake up!" Lloyd was beginning to sound im-patient. "You work here, don't yo

"Joe," said the man thoughtfully. "Work. Yes, I work. I make them." His words ran toge oddly, as though he had a cleft palate.

With another glance at the badge, Lloyd gripped Joe's arm and ran him through the assem room. "Here's your place. Hop to it. Know what to do?"

The other drew his scrawny body erect. "I am—expert," he re-marked. "Make them better Ponthwank."

"O. K.," Lloyd said. "Make 'em, then." And he went away.

The man called Joe hesitated, nursing the bruise on his head. The overalls caught his atten and he examined them wonderingly. Where—oh, yes. They had been hanging in the room f which he had first emerged. His own garments had, naturally, dissipated during the trip—what tri

Amnesia, he thought. He had fallen from the . . . the something . . . when it slowed down stopped. How odd this huge, machine-filled barn looked. It struck no chord of remembrance.

Amnesia, that was it. He was a worker. He made things. As for the unfamiliarity of surroundings, that meant nothing. He was still dazed. The clouds would lift from his mind prese They were beginning to do that already.

Work. Joe scuttled around the room, trying to goad his faulty memory. Men in overalls

doing things. Simple,, obvious things. But how childish—how elemental! Perhaps this w kindergarten.

After a while Joe went out into a stock room and examined some finished models of combina radio-phonographs. So that was it. Awkward and clumsy, but it wasn't his place to say so. No. job was to make Twonkies.

Twonkies? The name jolted his memory again. Of course he knew how to make Twonkies. I made them all his life—had been specially trained for the job. Now they were using a different m of Twonky, but what the hell! Child's play for a clever workman.

Joe went back into the shop and found a vacant bench. He began to build a Two Occasionally he slipped off and stole the material he needed. Once, when he couldn't locate tungsten, he hastily built a small gadget and made it.

His bench was in a distant corner, badly lighted, though it seemed quite bright to Joe's e Nobody noticed the console that was swiftly growing to completion there. Joe worked very, fast. He ignored the noon whistle, and, at quitting time, his task was finished. It could, perh stand another coat of paint—it lacked the Shimmertone of a standard Twonky. But none of others had Shimmertone. Joe sighed, crawled under the bench, looked in vain for a relaxopad, went to sleep on the floor.

A few hours later he woke up. The factory was empty. Odd! Maybe the working hours changed. Maybe— Joe's mind felt funny. Sleep had cleared away the mists of amnesia, if su had been, but he still felt dazed.

Muttering under his breath, he sent the Twonky into the stock room and compared it with others. Superficially it was identical with a console radio-phonograph combination of the l model. Following the pattern of the others, Joe had camouflaged and dis-guised the various or and reactors.

He went back into the shop. Then the last of the mists cleared from his mind. Joe's shoul jerked convulsively.

"Great Snell!" he gasped. "So that was it! I ran into a temporal snag!"

With a startled glance around, he fled to the storeroom from which he had first emerged. overalls he took off and returned to their hook. After that, Joe went over to a corner, felt arou the air, nodded with satisfaction, and seated himself on nothing, three feet above the floor. Then vanished.

"Time," said Kerry WTesterfield, "is curved. Eventually it gets back to the same place whe started. That's duplication." He put his feet up on a conveniently outjutting rock of the chimney stretched luxuriously. From the kitchen Martha made clinking noises with bottles and glasses.

"Yesterday at this time I had a Martini," Kerry said. "The time curve indicates that I should another one now. Are you listen-ing, angel?"

"I'm pouring," said the angel distantly.

"You get my point, then. Here's another. Time describes a spiral instead of a circle. If you the first cycle a, the second one's a plus 1—see? Which means a double Martini tonight."

"I know where that would end," Martha remarked, coming into the spacious, oak-raftered l room. She was a small, dark-haired woman with a singularly pretty face and a figure to match. tiny gingham apron looked slightly absurd in combination with slacks and silk blouse. "And don't make infinity-proof gin. Here's your Martini." She did things with the shaker and manipul glasses.

"Stir slowly," Kerry cautioned. "Never shake. Ah—that's it." He accepted the drink and ey

appreciatively. Black hair, sprinkled with gray, gleamed in the lamplight as he sipped the Ma
"Good. Very good."

Martha drank slowly and eyed her husband. A nice guy, Kerry Westerfield. He was forty-
pleasantly ugly, with a wide mouth and an occasional sardonic gleam in his gray eyes a
contemplated life. They had been married for twelve years, and liked it.

From outside, the late faint glow of sunset came through the win-dows, picking out the cor
cabinet that stood against the wall by the door. Kerry peered at it with appreciation.

"A pretty penny," he remarked. "Still—"

"What? Oh. The men had a tough time getting it up the 'stairs. Why don't you try it, Kerry?"

"Didn't you?"

"The old one was complicated enough," Martha said, in a baffled manner. "Gadgets. T
confuse me. I was brought up on an Edison. You wound it up with a crank, and strange no
came out of a horn. That I could understand. But now—you push a button, and extraor-di
things happen. Electric eyes, tone selections, records that get played on both sides, to
accompaniment of weird groanings and clickings from inside the console—probably
understand those things. I don't even want to. Whenever I play a Crosby record in a superdo
like that, Bing seems embarrassed."

Keny ate his olive. "I'm going to play some Sibelius." He nodded toward a table. "There's a
Crosby record for you. The latest."

Martha wriggled happily. "Can I, maybe, huh?"

"Uh-huh."

"But you'll have to show me how."

"Simple enough," said Kerry, beaming at the console. "Those babies are pretty good, you kn
They do everything but think."

"I wish it'd wash dishes," Martha remarked. She set down her glass, got up, and vanished
the kitchen.

Kerry snapped on a lamp near by and went over to examine the new radio, Mideastern's l
model, with all the new improvements. It had been expensive—but what the hell? He could affor
And the old one had been pretty well shot.

It was not, he saw, plugged in. Nor were there any wires in evidence—not even a gro
Something new, perhaps. Built in antenna *and* ground. Kerry crouched down, looked for a soc
and plugged the cord into it.

That done, he opened the doors and eyed the dials with every ap-pearance of satisfactio
beam of bluish light shot out and hit him in the eyes. From the depths of the console a f
thoughtful clicking proceeded. Abruptly it stopped. Kerry blinked, fiddled with dials and switc
and bit at a fingernail.

The radio said, in a distant voice, "Psychology pattern checked and recorded."

"Eh?" Kerry twirled a dial. "Wonder what that was? Amateur station—no, they're off the
Hm-m-m." He shrugged and went over to a chair beside the shelves of albums. His gaze ran sw
over the titles and composers' names. Where was the "Swan of Tuonela"? There it was, nex
"Finlandia." Kerry took down the album and opened it in his lap. With his free hand he extract
cigarette from his pocket, put it between his lips, and fumbled for the matches on the table be
him. The first match he lit went out.

He tossed it into the fireplace and was about to reach for another when a faint noise caugh
attention. The radio was walking across the room toward him. A whiplike tendril flicked out f

somewhere, picked up a match, scratched it beneath the table top—as Kerry had done—and the flame to the man's cigarette.

Automatic reflexes took over. Kerry sucked in his breath, and ex-ploded in smoky, rac coughs. He bent double, gasping and mo-mentarily blind.

When he could see again, the radio was back in its accustomed place.

Kerry caught his lower lip between his teeth. "Martha," he called.

"Soup's on," her voice said.

Kerry didn't answer. He stood up, went over to the radio, and looked at it hesitantly. The ele cord had been pulled out of its socket. Kerry gingerly replaced it.

He crouched to examine the console's legs. They looked like finely finished wood. exploratory hand told him nothing. Wood—hard and brittle.

How in hell— "Dinner!" Martha called.

Kerry threw his cigarette into the fireplace and slowly walked out of the room. His wife, setti gravy boat in place, stared at him.

"How many Martinis did you have?"

"Just one," Kerry said in a vague way. "I must have dozed off for a minute. Yeah. I must hav

"Well, fall to," Martha commanded. "This is the last chance you'll have to make a pig of you on my dumplings, for a week, anyway."

Kerry absently felt for his wallet, took out an envelope, and tossed it toward his wife. "He your ticket, angel. Don't lose it."

"Oh? I rate a compartment!" Martha thrust the pasteboard back into its envelope and gur happily. "You're a pal. Sure you can get along without me?"

"Huh? Hm-m-m—I think so." Kerry salted his avocado. He shook himself and seemed to c out of a slight daze. "Sure, I'll be all right. You trot off to Denver and help Carol have her baby. all in the family."

"We-ell, my only sister—" Martha grinned. "You know how she and Bill are. Quite nuts. Th need a steadying hand just now."

There was no reply. Kerry was brooding over a forkful of avocado. He muttered something a the Venerable Bede.

"What about him?"

"Lecture tomorrow. Every term we bog down on the Bede, for some strange reason. Ah, well

"Got your lecture ready?"

Kerry nodded. "Sure." For eight years he had taught at the Uni-versity, and he certainly sh know the schedule by this time!

Later, over coffee and cigarettes, Martha glanced at her wrist watch. "Nearly train time. I'd b finish packing. The dishes—"

"I'll do 'em." Kerry wandered after his wife into the bedroom and made motions of f helpfulness. After a while, he carried the bags down to the car. Martha joined him, and they hea for the depot.

The train was on time. Half an hour after it had pulled out, Kerry drove the car back into garage, let himself into the house and yawned mightily. He was tired. Well, the dishes, and then and a book in bed.

With a puzzled look at the radio, he entered the kitchen and did things with water and soap cl The hall phone rang. Kerry wiped his hands on a dish towel and answered it.

It was Mike Fitzgerald, who taught psychology at the University.

"Hiya, Fitz."

"Hiya. Martha gone?"

"Yeah. I just drove her to the train."

"Feel like talking, then? I've got some pretty good Scotch. Why not run over and gab a while

"Like to," Kerry said, yawning again, "but I'm dead. Tomorrow's a big day. Rain check?"

"Sure. I just finished correcting papers, and felt the need of sharpen-ing my mind. What's matter?"

"Nothing. Wait a minute." Kerry put down the phone and looked over his shoulder, scow Noises were coming from the kitchen. What the hell!

He went along the hall and stopped in the doorway, motionless and staring. The radio washing the dishes.

After a while he returned to the phone. Fitzgerald said, "Some-thing?"

"My new radio," Kerry told him carefully. "It's washing the dishes."

Fitz didn't answer for a moment. His laugh was a bit hesitant. "Oh?"

"I'll call you back," Kerry said, and hung up. He stood motionless for a while, chewing his Then he walked back to the kitchen and paused to watch.

The radio's back was toward him. Several limber tentacles were manipulating the dishes, exp sousing them in hot, soapy water, scrubbing them with the little mop, dipping them into the water, and then stacking them neatly in the metal rack. Those whip-lashes were the only sig unusual activity. The legs were ap-parently solid.

"Hey!" Kerry said.

There was no response.

He sidled around till he could examine the radio more closely. The tentacles emerged from a under one of the dials. The electric cord was dangling. No juice, then. But what— Kerry step back and fumbled out a cigarette. Instantly the radio turned, took a match from its container on stove, and walked forward. Kerry blinked, studying the legs. They couldn't be wood. They bending as the . . . the thing moved, elastic as rubber. The radio had a peculiar sidling motion u anything else on earth.

It lit Kerry's cigarette and went back to the sink, where it resumed the dishwashing.

Kerry phoned Fitzgerald again. "I wasn't kidding. I'm having hallu-cinations or something. damned radio just lit a cigarette for me."

"Wait a minute—" Fitzgerald's voice sounded undecided. "This is a gag—eh?"

"No. And I don't think it's a hallucination, either. It's up your alley. Can you run over and my knee-jerks?"

"All right," Fitz said. "Give me ten minutes. Have a drink ready."

He hung up, and Kerry, laying the phone back into its cradle, turned to see the radio walking of the kitchen toward the living room. Its square, boxlike contour was subtly horrifying, like s bizarre sort of hobgoblin. Kerry shivered.

He followed the radio, to find it in its former place, motionless and impassive. He opened doors, examining the turntable, the phonograph arm, and the other buttons and gadgets. There nothing apparently unusual. Again he touched the legs. They were not wood, after all. Some pla which seemed quite hard. Or— maybe they were wood, after all. It was difficult to make cer with-out damaging the finish. Kerry felt a natural reluctance to use a knife on his new console.

He tried the radio, getting local stations without trouble. The tone was good—unusually good thought. The phonograph— He picked up Halvorsen's "Entrance of the Boyards" at random

slipped it into place, closing the lid. No sound emerged. Investi-gation proved that the needle moving rhythmically along the groove, but without audible result. Well?

Kerry removed the record as the doorbell rang. It was Fitzgerald, a gangling, saturnine man w leathery, wrinkled face and a tousled mop of dull-gray hair. He extended a large, bony hand.

"Where's my drink?"

"'Lo, Fitz. Come ill the kitchen. I'll mix. Highball?"

"Highball."

"O. K." Kerry led the way. "Don't drink it just yet, though. I want to show you my combination."

"The one that washes dishes?" Fitzgerald asked. "What else does it do?"

Kerry gave the other a glass. "It won't play records."

"Oh, well. A minor matter, if it'll do the housework. Let's take a look at it." Fitzgerald went the living room, selected "Afternoon of a Faun," and approached the radio. "It isn't plugged in."

"That doesn't matter a bit," Kerry said wildly.

"Batteries?" Fitzgerald slipped the record in place and adjusted the switches. "Now we'll see. beamed triumphantly at Kerry. "Well? It's playing now."

It was.

Kerry said, "Try that Halvorsen piece. Here." He handed the disk to Fitzgerald, who pushed reject switch and watched the lever arm lift.

But this time the phonograph refused to play. It didn't like "En-trance of the Boyards."

"That's funny," Fitzgerald grunted. "Probably the trouble's with the record. Let's try another

There was no trouble with "Daphnis and Chloe." But the radio silently rejected the compos "Bolero."

Kerry sat down and pointed to a near-by chair. "That doesn't prove anything. Come over and watch. Don't drink anything yet. You, uh, you feel perfectly normal?"

"Sure. Well?"

Kerry took out a cigarette. The console walked across the room, picking up a match book on way, and politely held the flame. Then it went back to its place against the wall.

Fitzgerald didn't say anything. After a while he took a cigarette from his pocket and wa Nothing happened.

"So?" Kerry asked.

"A robot. That's the only possible answer. Where in the name of Petrarch did you get it?"

"You don't seem much surprised."

"I am, though. But I've seen robots before— Westinghouse tried it, you know. Only thi Fitzgerald tapped his teeth with a nail. "Who made it?"

"How the devil should I know?" Kerry demanded. "The radio people, I suppose."

Fitzgerald narrowed his eyes. "Wait a minute. I don't quite under-stand—"

"There's nothing to understand. I bought this combination a few days ago. Turned in the old It was delivered this afternoon, and—" Kerry explained what had happened.

"You mean you didn't know it was a robot?"

"Exactly. I bought it as a radio. And . . . and. . . the damn thing seems almost alive to me."

"Nope." Fitzgerald shook his head, rose, and inspected the con-sole carefully. "It's a new kin robot. At least—" he hesitated. "What else is there to think? I suggest you get in touch with Mideastern people tomorrow and check up."

"Let's open the cabinet and look inside," Kerry suggested.

Fitzgerald was willing, but the experiment proved impossible. The presumably wooden pa weren't screwed into place, and there was no apparent way of opening the console. Keny fou screwdriver and applied it, gingerly at first, then with a sort of repressed fury. He could neithe free a panel nor even scratch the dark, smooth finish of the cabinet.

"Damn!" he saidlinally. "Well, your guess is as good as mine. It's a robot. Only I didn't k they could make 'em like this. And why in a radio?"

"Don't ask me," Fitzgerald shrugged. "Check up tomorrow. That's the first step. Naturally pretty baffled. If a new sort of specialized robot has been invented, why put it in a console? what makes those legs move? There aren't any casters."

"I've been wondering about that, too."

"When it moves, the legs look—rubbery. But they're not. They're hard as . . . as hardwood plastic."

"I'm afraid of the thing," Kerry said.

"Want to stay at my place tonight?"

"N-no. No. I guess not. The—robot—can't hurt me."

"I don't think it wants to. It's been helping you, hasn't it?"

"Yeah," Kerry said, and went off to mix another drink.

The rest of the conversation was inconclusive. Fitzgerald, several hours later, went home ra worried. He wasn't as casual as he had pretended, for the sake of Kerry's nerves. The impinge of something so entirely unexpected on normal life was subtly frighten-ing. And yet, as he had the robot didn't seem menacing— Kerry went to bed, with a new detective mystery. The r followed him into the bedroom and gently took the book out of his hand. Kerry instinct snatched for it.

"Hey!" he said. "What the devil—"

The radio went back into the living room. Kerry followed, in time to see the book replaced on shelf. After a bit Kerry retreated, locking his door, and slept uneasily till dawn.

In dressing gown and slippers, he stumbled out to stare at the console. It was back in its fo place, looking as though it had never moved. Kerry, rather white around the gills, made breakfas

He was allowed only one cup of coffee. The radio appeared, re-provingly took the second from his hand, and emptied it into the sink.

That was quite enough for Keny Westerfield. He found his hat and topcoat and almost ran ou the house. He had a horrid feeling that the radio might follow him, but it didn't, luckily for his sa He was beginning to be worried.

During the morning he found time to telephone Mideastern. The salesman knew nothing. It w standard model combination—the latest. If it wasn't giving satisfaction, of course, he'd be to— "It's O. K.," Kerry said. "But who made the thing? That's what I want to find out."

"One moment, sir." There was a delay. "It came from Mr. Lloyd's department. One of foremen."

"Let me speak to him, please."

But Lloyd wasn't very helpful. After much thought, he remembered that the combination been placed in the stock room without a serial number. It had been added later.

"But who *made* it?"

"I just don't know. I can find out for you, I guess. Suppose I ring you back."

"Don't forget," Kerry said, and went back to his class. The lecture on the Venerable Bede wa too successful.

At lunch he saw Fitzgerald, who seemed relieved when Kerry came over to his table. “Find any more about your pet robot?” the psy-chology professor demanded.

No one else was within hearing. With a sigh Kerry sat down and lit a cigarette. “Not a thing. I pleasure to be able to do this myself.” He drew smoke into his lungs. “I phoned the company.”

“And?”

“They don’t know anything. Except that it didn’t have a serial number.”

“That may be significant,” Fitzgerald said.

Kerry told the other about the incidents of the book and the coffee, and Fitzgerald squi thoughtfully at his milk. “I’ve given you some psych tests. Too much stimulation isn’t good you.”

“A detective yarn!”

“Carrying it a bit to extremes, I’ll admit. But I can understand *why* the robot acted way—though I dunno how it managed it.” He hesitated. “Without intelligence, that is.”

“Intelligence?” Kerry licked his lips. “I’m not so sure that it’s just a machine. And I’m not cra

“No, you’re not. But you say the robot was in the front room. How could it tell what you reading?”

“Short of X-ray vision and superfast scanning and assimilative powers, I can’t imagine. Perha doesn’t want me to read anything.”

“You’ve said something,” Fitzgerald grunted. “Know much about theoretical—machines- that type?”

“Robots?”

“Purely theoretical. Your brain’s a colloid, you know. Compact, complicated—but s Suppose you work out a gadget with a multi-million radioatom iinit embedded in an insul material—the result is a brain, Kerry. A brain with a tremendous number of units interactin light-velocity speeds. A radio tube adjusts current flow when it’s operating at forty million sepa signals a second. And— theoretically—a radloatomic brain of the type I’ve mentioned could inc perception, recognition, consideration, reaction and adjust-ment in a hundred-thousandth second.”

“Theory.”

“I’ve thought so. But I’d like to find out where your radio came from.”

A page came over. “Telephone call for Mr. Westerfield.”

Kerry excused himself and left. When he returned, there was a puzzled frown knitting his brows. Fitzgerald looked at him in-quiringly.

“Guy named Lloyd, at the Mideastern plant. I was talking to him about the radio.”

“Any luck?”

Kerry shook his head. “No. Well, not much. He didn’t know who had built the thing.”

“But it was built in the plant?”

“Yes. About two weeks ago—but there’s no record of who worked on it. Lloyd seemed to t that was very, very funny. If a radio’s built in the plant, they *know* who put it together.”

“So?”

“So nothing. I asked him how to open the cabinet, and he said it was easy. Just unscrew the p in back.”

“There aren’t any screws,” Fitzgerald said.

“I know.”

They looked at one another.

Fitzgerald said, “I’d give fifty bucks to find out whether that robot was really built only

weeks ago.”

“Why?”

“Because a radioatomic brain would need training. Even in such matters as the lighting cigarette.”

“It saw me light one.”

“And followed the example. The dish-washing—hm-m-m. Induc-tion, I suppose. If that ga has been trained, it’s a robot. If it hasn’t—” Fitzgerald stopped.

Kerry blinked. “Yes?”

“I don’t know what the devil it is. It bears the same relation to a robot that we bear to eohip One thing I do know, Kerry; it’s very probable that no scientist today has the knowledge it w take to make a . . . a thing like that.”

“You’re arguing in circles,” Kerry said. “It *was* made.”

“Uh-huh. But how—when—and by whom? That’s what’s got me worried.”

“Well, I’ve a class in five minutes. Why not come over tonight?”

“Can’t. I’m lecturing at the Hall. I’ll phone you after, though.”

With a nod Kerry went out, trying to dismiss the matter from his mind. He succeeded pretty But dining alone in a restaurant that night, he began to feel a general unwillingness to go hom hob-goblin was waiting for him.

“Brandy,” he told the waiter. “Make it double.”

Two hours later a taxi let Kerry out at his door. He was remarkably drunk. Things swam be his eyes. He walked unsteadily toward the porch, mounted the steps with exaggerated care, an himself into the house.

He switched on a lamp.

The radio came forward to meet him. Tentacles, thin, but strong as metal, coiled gently aroun body, holding him motionless. A pang of violent fear struck through Kerry. He struggled despera and tried to yell, but his throat was dry.

From the radio panel a beam of yellow light shot out, blinding the man. It swung down, aime his chest. Abruptly a queer taste was perceptible under Kerry’s tongue.

After a minute or so, the ray clicked out, the tentacles flashed back out of sight, and the con returned to its corner. Kerry staggered weakly to a chair and relaxed, gulping.

He was sober. Which was quite impossible. Fourteen brandies infiltrate a definite amoun alcohol into the system. One can’t wave a magic wand and instantly reach a state of sobriety. that was exactly what had happened.

The—robot—was trying to be helpful. Only Kerry would have preferred to remain drunk.

He got up gingerly and sidled past the radio to the bookshelf. One eye on the combination took down the detective novel he had tried to read on the preceding night. As he had expected radio took it from his hand and replaced it on the shelf. Kerry, remember-ing Fitzgerald’s wo glanced at his watch. Reaction time, four seconds.

He took down a Chaucer and waited, but the radio didn’t stir. However, when Kerry fou history volume, it was gently removed from his fingers. Reaction time, six seconds.

Kerry located a history twice as thick.

Reaction time, ten seconds.

Uh-huh. So the robot did read the books. That meant X-ray vision and superswift reacti Jumping Jehoshaphat!

Keny tested more books, wondering what the criterion was. “Alice in Wonderland” was snat

from his hand; Millay's poems were not. He made a list, with two columns, for future reference.

The robot, then, was not merely a servant. It was a censor. But what was the standard comparison?

After a while he remembered his lecture tomorrow, and thumbed through his notes. Several po needed verification. Rather hesitantly he located the necessary reference book—and the robot it away from him.

"Wait a minute," Kerry said. "I need that." He tried to pull the volume out of the tentacle's gr without success. The console paid no attention. It calmly replaced the book on its shelf.

Kerry stood biting his lip. This was a bit too much. The damned robot was a monitor. He si toward the book, snatched it, and was out in the hall before the radio could move.

The thing was coming after him. He could hear the soft padding of its . . . its feet. Kerry scu into the bedroom and locked the door. He waited, heart thumping, as the knob was tried gently.

A wire-thin cilia crept through the crack of the door and fumbled with the key. Kerry sudd jumped forward and shoved the auxiliary bolt into position. But that didn't help, either. The rob precision tools—the specialized antenna—slid it back; and then the console opened the d walked into the room, and came toward Kerry.

He felt a touch of panic. With a little gasp he threw the book at the thing, and it caught it de Apparently that was all that was wanted, for the radio turned and went out, rocking awkwardly o rubbery legs, carrying the forbidden volume. Kerry cursed quietly.

The phone rang. It was Fitzgerald.

"Well? How'd you make out?"

"Have you got a copy of Cassen's 'Social Literature of the Ages'?"

"I don't think so—no. Why?"

"I'll get it in the University library tomorrow, then." Kerry ex-plained what had happe Fitzgerald whistled softly.

"Interfering, is it? Hm-m-m. I wonder—"

"I'm afraid of the thing."

"I don't think it means you any harm. You say it sobered you up?"

"Yeah. With a light ray. That isn't very logical."

"It might be. The vibrationary equivalent of thiamin chloride."

"Light?"

"There's vitamin content in sunlight, you know. That isn't the important point. It's censo your reading—and apparently it reads the books, with superfast reactions. That gadget, whatev is, isn't merely a robot."

"You're telling me," Kerry said grimly. "It's a Hitler."

Fitzgerald didn't laugh. Rather soberly, he suggested, "Suppose you spend the night at place?"

"No," Kerry said, his voice stubborn. "No so-and-so radio's going to chase me out of my ho I'll take an ax to the thing first."

"We-ell—you know what you're doing, I suppose. Phone me if anything happens."

"O. K.," Kerry said, and hung up. He went into the living room and eyed the radio coldly. W the devil was it—and what was it trying to do? Certainly it wasn't merely a robot. Equally certa it wasn't alive, in the sense that a colloid brain is alive.

Lips thinned, he went over and fiddled with the dials and switches. A swing band's throb erratic tempo came from the console. He tried the short-wave band—nothing unusual there. So?

So nothing. There was no answer.

After a while he went to bed.

At luncheon the next day he brought Cassen's "Social Literature" to show Fitzgerald.

"What about it?"

"Look here," Kerry flipped the pages and indicated a passage. "Does this mean anything to y

Fitzgerald read it. "Yeah. The point seems to be that individualism is necessary for the produc of literature. Right?"

Kerry looked at him. "I don't know."

"My mind goes funny."

Fitzgerald rumpled his gray hair, narrowing his eyes and watching the other man intently. "C again. I don't quite—"

With angry patience, Kerry said, "This morning I went into the library and looked at reference. I read it all right. But it didn't mean anything to me. Just words. Know how it is w you're fagged out and have been reading a lot? You'll run into a sentence with a lot of subjun clauses, and it doesn't percolate. Well, it was like that."

"Read it now," Fitzgerald said quietly, thrusting the book across the table.

Kerry obeyed, looking up with a wry smile. "No good."

"Read it aloud. I'll go over it with you, step by step."

But that didn't help. Kerry seemed utterly unable to assimilate the sense of the passage.

"Semantic block, maybe," Fitzgerald said, scratching his ear. "Is this the first time happened?"

"Yes . . . no. I don't know."

"Got any classes this afternoon? Good. Let's run over to your place."

Kerry thrust away his plate. "All right. I'm not hungry. Whenever you're ready—"

Half an hour later they were looking at the radio. It seemed quite harmless. Fitzgerald wa some time trying to pry the panel off, but finally gave it up as a bad job. He found pencil and pa seated himself opposite Kerry, and began to ask questions.

At one point he paused. "You didn't mention that before."

"Forgot it, I guess."

Fitzgerald tapped his teeth with the pencil. "Hm-m-m. The first time the radio acted up—"

"It hit me in the eye with a blue light—"

"Not that. I mean—what it said."

Kerry blinked. "What *it* said?" He hesitated. "'Psychology pattern checked and noted, something like that. I thought I'd tuned in on some station and got part of a quiz progra something. You mean—"

"Were the words easy to understand? Good English?"

"No, now that I remember it," Kerry scowled. "They were slurred quite a lot. Vowels stressed

"Uh-huh. Well, let's get on." They tried a word-association test.

Finally Fitzgerald leaned back, frowning. "I want to check this stuff with the last tests I gave y few months ago. It looks funny to me—damned funny. I'd feel a lot better if I knew exactly memory was. We've done considerable work on mnemonics—artificial memory. Still, it may no that at all."

"Eh?"

"That—machine. Either it's got an artificial memory, has been highly trained, or else it's adju to a different milieu and culture. It has affected you—quite a lot."

Kerry licked dry lips. “How?”

“Implanted blocks in your mind. I haven’t correlated them yet. When I do, we may be abl figure out some sort of answer. No, that thing isn’t a robot. It’s a lot more than that.”

Kerry took out a cigarette; the console walked across the room and lit it for him. The two watched with a faint shrinking horror.

“You’d better stay with me tonight,” Fitzgerald suggested.

“No,” Kerry said. He shivered.

The next day Fitzgerald looked for Kerry at lunch, but the younger man did not appear telephoned the house, and Martha answered the call.

“Hello! When did you get back?”

“Hello, Fitz. About an hour ago. My sister went ahead and had her baby without me—so I c back.” She stopped, and Fitzgerald was alarmed at her tone.

“Where’s Kerry?”

“He’s here. Can you come over, Fitz? I’m worried.”

“What’s the matter with him?”

“I . . . I don’t know. Come right away.”

“O. K.,” Fitzgerald said, and hung up, biting his lips. He was worried. When, a short while l he rang the Westerfield bell, he discovered that his nerves were badly out of control. But sigh Martha reassured him.

He followed her into the living room. Fitzgerald’s glance went at once to the console, which unchanged; and then to Kerry, seated motionless by a window. Keny’s face had a blank, d look. His pupils were dilated, and he seemed to recognize Fitzgerald only slowly.

“Hello, Fitz,” he said.

“How do you feel?”

Martha broke in. “Fitz, what’s wrong? Is he sick? Shall I call the doctor?”

Fitzgerald sat down. “Have you noticed anything funny about that radio?”

“No. Why?”

“Then listen.” He told the whole story, watching incredulity strug-gle with reluctant belie Martha’s face. Presently she said, “I can’t quite—”

“If Kerry takes out a cigarette, the thing will light it for him. Want to see how it works?”

“N-no. Yes. I suppose so.” Martha’s eyes were wide.

Fitzgerald gave Kerry a cigarette. The expected happened.

Martha didn’t say a word. When the console had returned to its place, she shivered and over to Kerry. He looked at her vaguely.

“He needs a doctor, Fitz.”

“Yes.” Fitzgerald didn’t mention that a doctor might be quite useless.

“What is that thing?”

“It’s more than a robot. And it’s been readjusting Kerry. I told you what’s happened. Wh checked Kerry’s psychology patterns, I found that they’d altered. He’s lost most of his initiative

“Nobody on earth could have made that—”

Fitzgerald scowled. “I thought of that. It seems to be the product of a well-developed cul quite different from ours. Martian, per-haps. It’s such a specialized thing that it naturally fits in compli-cated culture. But I do not understand why it looks exactly like a Mideastern console rad

Martha touched Kerry’s hand. “Camouflage?”

“But why? You were one of my best pupils in psych, Martha. Look at this logically. Imagi

civilization where a gadget like that has its place. Use inductive reasoning."

"I'm trying to. I can't think very well. Fitz, I'm worried about Kerry."

"I'm all right," Kerry said.

Fitzgerald put his fingertips together. "It isn't a radio so much as a monitor. In this c civilization, perhaps every man has one, or maybe only a few—the ones who need it. It keeps t in line."

"By destroying initiative?"

Fitzgerald made a helpless gesture. "I don't know! It worked that way in Kerry's case others—I don't know."

Martha stood up. "I don't think we should talk any more. Kerry needs a doctor. After that we decide upon that." She pointed to the console.

Fitzgerald said, "It'd be rather a shame to wreck it, but—" His look was significant.

The console moved. It came out from its corner with a sidling, rocking gait and walked tow Fitzgerald. As he sprang up, the whip-like tentacles flashed out and seized him. A pale ray sl into the man's eyes.

Almost instantly it vanished; the tentacles withdrew, and the radio returned to its place. Fitzge stood motionless. Martha was on her feet, one hand at her mouth.

"Fitz!" Her voice shook.

He hesitated. "Yes? What's the matter?"

"Are you hurt? What did it do to you?"

Fitzgerald frowned a little. "Eh? Hurt? I don't—"

"The radio. What did it do?"

He looked toward the console. "Something wrong with it? Afraid I'm not much of a repair m Martha."

"Fitz." She came forward and gripped his arm. "Listen to me." Quick words spilled from mouth. The radio. Kerry. Their dis-cussion— Fitzgerald looked at her blankly, as though he di quite under-stand. "I guess I'm stupid today. I can't quite understand what you're talking about

"The radio-you know! You said it changed Kerry—" Martha paused, staring at the man.

Fitzgerald was definitely puzzled. Martha was acting strangely. Queer! He'd always consid her a pretty level-headed girl. But now she was talking nonsense. At least, he couldn't figure ou meaning of her words—there was no sense to them.

And why was she talking about the radio? Wasn't it satisfactory? Kerry had said it was a g buy, with a fine tone and the latest gadg-ets in it. Fitzgerald wondered, for a fleeting secon Martha had gone crazy.

In any case, he was late for his class. He said so. Martha didn't by to stop him when he went She was pale as chalk.

Kerry took out a cigarette. The radio walked over and held a match.

*"Kerry!"*

"Yes, Martha?" His voice was dead.

She stared at the . . . the radio. Mars? Another world—another civilization? What was it? W did it want? What was it trying to *do?*

Martha let herself out of the house and went to the garage. When she returned, a small hat was gripped tightly in her hand.

Kerry watched. He saw Martha walk over to the radio and lift the hatchet. Then a beam of

shot out, and Martha vanished. A little dust floated up in the afternoon sunlight.

"Destruction of life-form threatening attack," the radio said, slur-ring the words together.

Kerry's brain turned over. He felt sick, dazed and horribly empty. Martha— His mind—chur Instinct and emotion fought with something that smothered them. Abruptly the dams crumbled, the blocks were gone, the barriers down. Kerry cried out hoarsely, inarticulately, and sprang to feet.

"*Martha!*, he yelled.

She was gone. Kerry looked around. Where— What had happened? He couldn't remember.

He sat down in the chair again, rubbing his forehead. His free hand brought up a cigarette automatic reaction that brought instant response. The radio walked forward and held a lighted m ready.

Kerry made a choking, sick sound and flung himself out of the chair. He remembered now picked up the hatchet and sprang toward the console, teeth bared in a mirthless rictus.

Again the light beam flashed out.

Kerry vanished. The hatchet thudded onto the carpet.

The radio walked back to its place and stood motionless once more. A faint clicking proce from its radioatomic brain.

"Subject basically unsuitable," it said, after a moment. "Elimina-tion has been necessary." C "Preparation for next subject com-pleted."

*Click.*

"We'll take it," the boy said.

"You won't be making a mistake," smiled the rental agent. "It's quiet, isolated, and the pri quite reasonable."

"Not so very," the girl put in. "But it is just what we've been looking for."

The agent shrugged. "Of course an unfurnished place would run less. But—"

"We haven't been married long enough to get any furniture," the boy grinned. He put an around his wife. "Like it, hon?"

"Hm-m-m. Who lived here before?"

The agent scratched his cheek. "Let's see. Some people named Westerfield, I think. It was g to me for listing just about a week ago. Nice place. If I didn't own my own house, I'd jump myself."

"Nice radio," the boy said. "Late model, isn't it?" He went over to examine the console.

"Come along," the girl urged. "Let's look at the kitchen again."

"O. K., hon."

They went out of the room. From the hail came the sound of the agent's smooth voice, grow fainter. Warm afternoon sunlight slanted through the windows.

For a moment there was silence. Then— Click!

# THE HUNTING LODGE

by Randall Garrett

*This story, like the one that precedes it and Fred Saberhagen's "Without a Thought," shows machine in hostile guise. But where Padgett's twonky is an impersonal enemy and Saberhag*

*berserker is a vast cosmic entity, the mechanized huntsman in Garrett's story is a dedica vindictive pursuer. The tense chase that is the heart of this story is derived entirely from the na of that pursuer; the protagonist must deal with a super-machine that has a machine's limitat as well as a machine's capabilities, and so while on one level "The Hunting Lodge" is a fast-pa action story, on another it is a shrewd and convincing analysis of a probable future.*

*Randall Garrett, a burly, jovial ex-marine now living in Texas, has written uncount science-fiction stories and a number of novels, including the well-liked* Too Many Magician *runner-up for the 1967 Hugo award.*

"We'll help all we can," the Director said, "but if you're caught, that's all there is to it."

I nodded. It was the age-old warning: *If you're caught, we disown you.* I wondered, fleeti how many men had heard that warning during the long centuries of human history, and I wond how many of them had asked themselves the same question I was asking:

Why am I risking *my* neck?

And I wondered how many of them had had an an-swer.

"Ready, then?" the Director asked, glancing at his watch. I nodded and looked at my own. shadow hands pointed to 2250.

"Here's the gun."

I took it and checked its loading. "Untraceable, I suppose?"

He shook his head. "It can be traced, all right, but it won't lead to us. A gun which couldn traced almost certainly would be associated with us. But the best thing to do would be to bring gun back with you; that way, it's in no danger of being traced."

The way he said it gave me a chill. He wanted me back alive, right enough, but only so t would be no evi-dence.

"O.K." I said. "Let's go."

I put a nice, big, friendly grin on my face. After all, there was no use making him feel worse necessary. I knew he didn't like sending men out to be killed. I slipped the sleeve gun into its ho and then faced him.

"Blaze away!"

He looked me over, then touched the hypno controls. A light hit my eyes.

I was walking along the street when I came out of it, heading toward a flitter stand. An em flitter was sitting there waiting, so I climbed in and sat down.

Senator Rowley's number was ORdway 63-911. I dialed it and leaned back, just as though I every right to go there.

The flitter lifted perfectly and headed northwest, but I knew perfectly well that the scanners going full blast, sorting through their information banks to find me.

A mile or so out of the city, the flitter veered to the right, locked its controls, and began to around in a tight circle.

The viewphone lit up, but the screen stayed blank. A voice said: "Routine check. Ide yourself, please."

Routine! I knew better. But I just looked blank and stuck my right forearm into the checker. T was ashort hum while the ultrasonic scanners looked at the tantalum identity plate riveted to bone.

"Thank you, Mr. Gifford," said the voice. The phone cut off, but the flitter was still goin circles.

Then the phone lit again, and Senator Rowley's face—thin, dark, and bright-eyed—came on

screen.

"Gifford! Did you get it?"

"I got it, sir," I answered quietly.

He nodded, pleased. "Good! I'll be waiting for you."

Again the screen went dark, and this time the flitter straightened out and headed northwest more.

I tried not to feel too jittery, but I had to admit to myself that I was scared. The senator dangerous. If he could get a finger into the robot central office of the flitters, there was no wa knowing how far his control went.

He wasn't supposed to be able to tap a flitter any more than he was supposed to be able to t phone. But neither one was safe now.

Only a few miles ahead of me was the Lodge, probably the most tightly guarded home in world.

I knew I might not get in, of course. Senator Anthony Rowley was no fool, by a long shot placed his faith in robots. A machine might fail, but it would never be treacherous.

I could see the walls of the Lodge ahead as the flitter began to lose altitude. I could almost fee watching radar eyes that followed the craft down, and it made me nervous to realize that a se high-cycle guns were following the instructions of those eyes.

And, all alone in that big mansion—or fortress—sat Senator Rowley like a spider in the middl an intangi-ble web.

The public flitter, with me in it, lit like a fly on the roof of the mansion. I took a deep breath stepped out. The multiple eyes of the robot defenses watched me closely as I got into the wa elevator.

The hard plastic of the little sleeve gun was supposed to be transparent to X rays and sonics, I kept praying anyway. Suddenly I felt a tingle in my arm. I knew what

it was; a checker to see if the molecular structure of the tantalum identity plate was accordin government spec-ifications in every respect.

Identity plates were furnished only by the Federal gov-ernment, but they were also suppose be the only ones with analyzers. Even the senator shouldn't have had an unregistered job.

To play safe, I rubbed at the arm absently. I didn't know whether Gifford had ever felt that t before or not. If he had, he might ignore it, but he wouldn't let it startle him. If he hadn't, he m not be startled, but he wouldn't ignore it. Rubbing seemed the safest course.

The thing that kept running through my mind was—*how much did Rowley psychoimpressing?*

He had last seen Gifford four days ago, and at that time, Gifford could no more have betrayed senator than one of the robots could. Because, psychologically speaking, that's exactly what Gif had been—a robot. Theoretically, it is impossible to remove a competent psy-choimpressing jo less than six weeks of steady therapy. It *could* be done in a little less time, but it didn't leave patient in an ambient condition. And it couldn't, under any circumstances, be done in four days.

If Senator Rowley was thoroughly convinced I was Gifford, and if he trusted psychoimpress I was in easy.

I looked at my watch again. 2250. Exactly an hour since I had left. The change in time zones occurred while I was in the flitter, and the shadow hands had shifted back to accommodate.

It seemed to be taking a long time for the elevator to drop; I could just barely feel the moven The robots were giving me a very thorough going over.

Finally, the door slid open and I stepped out into the lounge. For the first time in my life, I the living face of Senator Anthony Rowley.

The filters built-into his phone pickup did a lot for him. They softened the fine wrinkles that m his face look like a piece of old leather. They added color to his grayish skin. They removed yellowishness from his eyes. In short, the senator's pickup filters took two centuries off his age.

Longevity can't do everything for you, I thought. But I could see what it *could* do, too, if were smart and had plenty of time. And those who had plenty of time were automatically the s ones.

The senator extended a hand. "Give me the briefcase, Gifford."

"Yes, sir." As I held out the small blue case, I glanced at my watch. 2255. And, as I watched last five became a six.

Four minutes to go.

"Sit down, Gifford." The senator waved me to a chair. I sat and watched him while he le through the sup-posedly secret papers.

Oh, they were real enough, all right, but they didn't contain any information that would be of v to him. He would be too dead for that.

He ignored me as he read. There was no need to watch Gifford. Even if Gifford had anything, the robotic brain in the basement of the house would have detected it with at least on its numerous sensory devices and acted to prevent the senator's death long before any mere hu could complete any action.

I knew that, and the senator knew it.

We sat.

2257.

The senator frowned. "This is all, Gifford?"

"I can't be sure, of course, sir. But I will say that any further information on the subject is bu pretty deeply. So well hidden, in fact, that even the government couldn't find it in time to use ag you."

"Mmmmmm."

2258.

The senator grinned. "This is it," he said through his tight, thin, old lips. "We'll be in comp control within a year, Gifford."

"That's good, sir. Very good."

It doesn't take much to play the part of a man who's been psychoimpressed as thoroughl Gifford had been.

2259.

The senator smiled softly and said nothing. I waited tensely, hoping that the darkness woul neither too long nor too short. I made no move toward the sleeve gun, but I was ready to grab soon as

2300!

The lights went out—and came on again.

The senator had time to look both startled and fright-ened before I shot him through the heart.

I didn't waste any time. The power had been cut off from the Great Northwestern Reactor, w supplied all the juice for the whole area, but the senator had provided wisely for that. He h reactor of his own built in for emergencies; it had cut in as soon as the Great Northwestern had g out.

But cutting off the power to a robot brain is the equivalent of hitting a man over the head w black-jack; it takes time to recover. It was that time lapse which had permitted me to kill Rowley which would, if I moved fast enough, permit me to escape before its deadly defenses coul rallied against me.

I ran toward a door and almost collided with it before I realized that it wasn't going to oper me. I had to push it aside. I kept on running, heading for an outside entrance. There was no wa knowing how long the robot would remain stunned.

Rowley had figured he was being smart when he built a single centralized computer to take all the defenses of the house instead of having a series of simple brains, one for each function. A in a way, I guess he was right; the Lodge could act as a single unit that way.

But Rowley had died because he insisted on that com-plication; the simpler the brain, the qui the recovery.

The outside door opened easily enough; the electrolocks were dead. I was still surrounded walls; the nearest exit was nearly half a mile away. That didn't bother me; I wasn't going to hav use it. There was a high-speed flitter waiting for me above the clouds.

I could hear it humming down toward me. Then I could see it, drifting down in a fast spiral.

*Whoom!*

I was startled for a timeless instant as I saw the flitter dissolve in a blossom of yellow-or flame. The flare, marking the end of my escape craft, hung in the air for an endless second and died slowly.

I realized then that the heavy defenses of the Lodge had come to life.

I didn't even stop to think. The glowing red of the fading explosion was still lighting the groun I turned and sprinted toward the garage. One thing I knew; the robot would not shoot down on the senator's own machines unless ordered to do so.

The robot was still not fully awake. It had reacted to the approach of a big, fast-moving ob but it still couldn't see a running man. Its scanners wouldn't track yet.

I shoved the garage doors open and looked inside. The bright lights disclosed ground veh and nothing more. The Hitters were all on the roof.

I hadn't any choice; I had to get out of there, and fast!

The senator had placed a lot of faith in the machines that guarded the Lodge. The keys were i lock of one big Ford-Studebaker. I shoved the control from auto to manual, turned the key started the engines.

As soon as they were humming, I started the car moving. And none too soon, either. The d of the garage slammed after me like the jaws of a man trap. I gunned the car for the nearest hoping that this one last effort would be successful. If I didn't make it through the outer gate, I m as well give up.

As I approached the heavy outer gates, I could see that they were functioning; I'd never get t open by hand. But the robot was still a little confused. It recognized the car and didn't recognize The gates dropped, so I didn't even slow the car. Pure luck again.

And close luck, at that. The gates tried to come back up out of the ground even as the h vehicle went over them; there was a loud bump as the rear wheels hit the top of the rising gate. again the robot was too late.

I took a deep breath and aimed the car toward the city. So far, so good. A clean getaway.

Another of the Immortals was dead. Senator Rowley's political machine would never again f through a vote to give him another longevity treatment, because the sena-tor's political force

been cut off at the head, and the target was gone. Pardon the mixed metaphor.

Longevity treatments are like a drug; the more you have, the more you want. I suppose it been a good idea a few centuries ago to restrict their use to men who were of such use to the that they deserved to live longer than the average. But the mistake was made in putting it up to voting public who should get the treatments.

Of course, they'd had a right to have a voice in it; at the beginning, the cost of a single treatm had been too high for any individual to pay for it. And, in addition, it had been a governm monopoly, since the government had paid for the research. So, if the taxpayer's money was t spent, the taxpayer had a right to say who it was to be spent on.

But if a man's life hangs on his ability to control the public, what other out does he have?

And the longer he lives, the greater his control. A man can become an institution if he lives enough. And Senator Rowley had lived long enough; he--

Something snickered on the instrument panel. I looked, but I couldn't see anything. T something moved under my foot. It was the accelerator. The car was slowing.

I didn't waste any time guessing; I knew what was happening. I opened the door just as the stopped. Fortunately, the doors had only manual controls; simple mechanical locks.

I jumped out of the car's way and watched it as it backed up, turned around, and drove off in direction of the Lodge. The robot was fully awake now; it had recalled the car. I hadn't realized the senator had set up the controls in his vehicles so that the master robot could take control a from a human being.

I thanked various and sundry deities that I had not climbed into one of the Hitters. It's hard to out of an aircraft when it's a few thousand feet above the earth.

Well, there was nothing to do but walk. So I walked.

It wasn't more than ten minutes before I heard the buzzing behind me. Something was com over the road at a good clip, but without headlights. In the darkness, I couldn't see a thing, b knew it wasn't an ordinary car. Not coming from the Lodge.

I ran for the nearest tree, a big monster at least three feet thick and fifty or sixty feet high. lowest branch was a heavy one about seven feet from the ground. I grabbed it and swung mysel and kept on climbing until I was a good twenty feet off the ground. Then I waited.

The whine stopped down the road about half a mile, about where I'd left the Ford-Studeba Whatever it was prowled around for a minute or two, then started coming on down the road.

When it finally came close enough for me to see it in the moonlight, I recognized it for wh was. A patrol robot. It was looking for me.

Then I heard another whine. But this one was different; it was a siren coming from the highway.

Overhead, I heard a flitter whistling through the sky. The police.

The patrol robot buzzed around on its six wheels, turn-ing its search-turret this way and trying to spot me.

The siren grew louder, and I saw the headlights in the distance. In less than a minute, the l struck the patrol robot, outlining every detail of the squat, ugly silhouette. It stopped, swivelin turret toward the police car. The warning light on the turret came on, glowing a bright red.

The cops slowed down and stopped. One of the men in the car called out, "Senator? Are yo the other end of that thing?"

No answer from the robot.

"I guess he's really dead," said another officer in a low, awed voice.

"It don't seem possible," the first voice said. Then he called again to the patrol robot. "W police officers. Will you permit us to show our identification?"

The patrol robot clicked a little as the information was relayed back to the Lodge and the an given. The red warning light turned green, indicating that the guns were not going to fire.

About that time, I decided that my only chance was to move around so that the trunk of the was between me and the road. I had to move slowly so they wouldn't hear me, but I finally made

I could hear the policeman saying, "According to the information we received, Senator Ro was shot by his secretary, Edgar Gifford. This patrol job must be hunting him."

"Hey!" said another voice. "Here comes another one! He must be in the area somewhere!"

I could hear the whining of a second patrol robot approaching from the Lodge. It was still abo mile away, judging from the sound.

I couldn't see what happened next, but I could hear the first robot moving, and it must have fo me, even though I was out of sight. Directional heat detector, probably.

"In the tree, eh?" said a cop.

Another called: "All right, Gifford! Come on down!"

Well, that was it. I was caught. But I wasn't going to be taken alive. I eased out the sleeve gun sneaked a peek around the tree. *No use killing a cop, I thought, he's just doing his job.*

So I fired at the car, which didn't hurt a thing.

"Look out!"

"Duck!"

"Get that blaster going!"

Good. It was going to be a blaster. It would take off the treetop and me with it. I'd die quickly

There was a sudden flurry of shots, and then silence.

I took another quick peek and got the shock of my life.

The four police officers were crumpled on the ground, shot down by the patrol robot from Lodge. One of them—the one holding the blaster—wasn't quite dead yet. He gasped somet obscene and fired the weapon just as two more slugs from the robot's turret hit him in the chest.

The turret exploded in a gout of fire.

I didn't get it, but I didn't have time to wonder what was going on. I know a chance when I one. I swung from the branch I was on and dropped to the ground, rolling over in a bed of leaves to take up the shock. Then I made a beeline for the police car.

On the way, I grabbed one of the helmets from a uniformed corpse, hoping that my own t was close enough to the same shade of scarlet to get me by. I climbed in and got the machine tu around just as the second patrol robot came into sight. It fired a couple of shots after me, but t patrol jobs don't have enough armament to shoot down a police car; they're strictly for hun unarmed and unprotected pedestrians.

Behind me there were a couple of flares in the sky that reminded me of my own exploding fl but I didn't worry about what they could be.

I was still puzzled about the robot's shooting down the police. It didn't make sense.

Oh, well, it had saved my neck, and I wasn't going to pinch a gift melon.

The police car I was in had evidently been the only ground vehicle dispatched toward Lodge—possibly because it happened to be nearby. It was a traffic-control car; the reg homicide squad was probably using Hitters.

I turned off the private road and onto the highway, easing into the traffic-control pattern letting the car drift along with the other vehicles. But I didn't shove it into automatic. I didn't

robots just then. Besides, if I let the main control panels take over the guiding of the car, someon headquarters might wonder why car such--and-such wasn't at the Lodge as ordered; they m wonder why it was going down the highway so uncon-cernedly.

There was only one drawback. I wasn't used to handling a car at a hundred and fifty to hundred miles an hour. If something should happen to the traffic pattern, I'd have to depend on own reflexes. And they might not be fast enough.

I decided I'd have to ditch the police car as soon as I could. It was too much trouble and easy to spot.

I had an idea. I turned off the highway again at the next break, a few miles farther on. There w much side traffic at that time of night, so I had to wait several minutes before the pattern broke a and a private car pulled out and headed down the side road.

I hit the siren and pulled him over to the side.

He was an average-sized character with a belligerent attitude and a fat face.

"What's the matter, officer? There was nothing wrong with that break. I didn't cut out of pattern on manual, you know. I was—" He stopped when he realized that my tunic was not that policeman. "Why, you're not—"

By then, I'd already cut him down with a stun gun I'd found in the arms compartment of police car. I hauled him out and changed tunics with him. His was a little loose, but not so much it would be noticeable. Then I put the helmet on his head and strapped him into the front seat o police vehicle with the safety belt.

After being hit with a stun gun, he'd be out for a good hour. That would be plenty of time a as I was concerned.

I transferred as much of the police armory as I thought I'd need into the fat-faced fell machine and then I climbed into the police car with him. I pulled the car around and headed l toward the highway.

Just before we reached the control area, I set the instruments for the Coast and headed him v back the way I had come.

I jumped out and slammed the door behind me as the automatic controls took over and put hi the traffic pattern.

Then I walked back to Fatty's car, got in, and drove back to the highway. I figured I could the controls of a private vehicle, so I set them and headed east, toward the city. Once I was th I'd have to get a flitter, somehow.

I spent the next twenty minutes changing my face. I couldn't do anything about the b structure; that would have to wait until I got back. Nor could I do anything about the ID plate was bolted on my left ulna; that, too, would have to wait.

I changed the color of my hair, darkening it from Gifford's gray to a mousy brown, and I to patch of hair out above my forehead to give me a balding look. The mustache went, and the side the beard, giving me a goatee effect. I trimmed down the brows and the hair, and put a coupl tubes in my nostrils to widen my nose.

I couldn't do much about the eyes; my little pocket kit didn't carry them. But, all in all, I look great deal less like Gifford than I had before.

Then I proceeded to stow a few weapons on and about my person. I had taken the sleeve gun of the scarlet tunic when I'd put it on the fat-faced man, but his own chartreuse tunic didn't ha sleeve holster, so I had to put the gun in a hip pocket. But the tunic was a godsend in another wa was loose enough to carry a few guns easily.

The car speaker said: "Attention! You are now ap-proaching Groverton, the last suburb be the city lim-its. Private automobiles may not be taken beyond this point. If you wish to bypass city, please indicate. If not, please go to the free storage lot in Groverton."

I decided I'd do neither. I might as well make the car as hard to find as possible. I took it t all-night repair technician in Groverton.

"Something wrong with the turbos," I told him. "Give her a complete overhaul."

He was very happy to do so. He'd be mighty unhappy when the cops took the car away wit paying him for it, but he didn't look as though he'd go broke from the loss. Besides, I thoug would be a good way to repay Fat-Face for borrowing his car.

I had purposely kept the hood of my tunic up while I was talking to the auto technician s wouldn't remem-ber my new face later, but I dropped the hood as soon as I got to the main stre Groverton. I didn't want to attract too much attention.

I looked at my watch. 0111. I'd passed back through the time-change again, so it had bee hour and ten minutes since I'd left the Lodge. I decided I needed something to eat.

Groverton was one of those old-fashioned suburbs built during the latter half of the twen century—sponge-glass streets and sidewalks, aluminum siding on the houses, s chrome-and-lucite business buildings. Real quaint.

I found an automat and went in. There were only a few people on the streets, but the auto wasn't empty by a long shot. Most of the crowd seemed to be teenage kids getting looped up af dance. One booth was empty, so I sat down in it, dialed for coffee and barn and eggs, and drop in the indicated change.

Shapeless little blobs of color were bouncing around in the tri-di tank in the wall, givi surrealistic dance accompaniment to "Anna from Texarkana":

*You should have seen the way she ate!*
*Her appetite insatiate*
*Was quite enough to break your pocketbook!*
*But with a yeast-digamma steak,*
*She never made a damn mistake*
*What tasty snythefoods that gal could cook!*
*Oh, my Anna! Her algae Manna*
*Was tasty as a Manna-cake could be!*
*Oh, my Anna—from Texarkana!*
*Oh, Anna, baby, you're the gal for me!*

I sipped coffee while the thing went through the third and fourth verses, trying to figure a wa get into the city without having to show the telltale ID plate in my arm.

"Anna" was cut off in the middle of the fifth verse. The blobs changed color and coalesced the face of Quinby Lester, news analyst.

"Good morning, free citizens! We are interrupting this program to bring you an announceme special impor-tance."

He looked very serious, very concerned, and, I thought, just a little bit puzzled. "At approxima midnight last night, there was a disturbance at the Lodge. Four police officers who were summo to the Lodge were shot and killed by Mr. Edgar Gifford, the creator of the distur-bance. This ma now at large in the vicinity. Police are making an extensive search within a five-hundred-mile ra

of the Lodge.

"Have you seen this man?"

A tri-di of Gifford appeared in place of Lester's features.

"This man is armed and dangerous. If you see him, report immediately to MONmouth 6-666- If your information leads to the capture of Edgar Gifford, you will receive a reward of ten thou dollars. Look around you! He may be near you now!"

Everybody in the automat looked apprehensively at everybody else. I joined them. I wasn't n worried about being spotted. When everybody wears beards, it's hard to spot a man under a har of face foliage. I was willing to bet that within the next half hour the police would be deluged calls from a thousand people who honestly thought they had seen Edgar Gifford.

The cops knew that. They were simply trying to scare me into doing something foolish.

They needn't have done that; I was perfectly capable of doing something foolish without help.

I thought carefully about my position. I was about fifteen miles from safety. Question: Cou call for help? Answer: No. Because I didn't know the number. I didn't even know who was wa for me. All that had been erased from my mind when the Director hypnoed me. I couldn't remember who I was working for or why!

My only chance was to get to Fourteenth and Riverside Drive. They'd pick me up there.

Oh, well, if I didn't make it, I wasn't fit to be an assassin, anyway.

I polished off the breakfast and took another look at my watch. 0147. I might as well get start had fifteen miles to walk.

Outside, the streets were fairly quiet. The old-fashioned streets hadn't been built to c themselves; a robot sweeper was prowling softly along the curb, sucking up the day's de pausing at every cross street to funnel the stuff into the disposal drains to be carried to process-ing plant.

A few people were walking the streets. Ahead of me, a drunk was sitting on the curb sucking bottle that had collapsed long ago, hoping to get one last drop out of it.

I decided the best way to get to my destination was to take Bradley to Macmillan, fo Macmillan to Four-teenth, then stay on Fourteenth until I got to Riverside Drive.

But no free citizen would walk that far. I'd better not look like one. I walked up to the swiller.

"Hey, Joe, how'd you like to make five?"

He looked up at me, trying to focus. "Sure, Sid, sure. Whatta gotta do?"

"Sell me your tunic."

He blinked. "Zissa gag? Ya get 'em free."

"No gag. I want your tunic."

"Sure. Fine. Gimme that five."

He peeled off the charity brown tunic and I handed him the five note. If I had him doped right, he'd be too drunk to remember what had happened to his tunic. He'd be even drunker whe started on that five note.

I pulled the brown on over the chartreuse tunic. I might want to get into a first-class installa and I couldn't do it wearing charity brown.

*"LOOK OUT!"*

*CLIK LIK LIK LIK LIK LIK LIK!*

I felt something grab my ankle and I turned fast. It was the street cleaner! It had reached o retractable picker and was trying to lift me into its hopper!

The drunk, who had done the yelling, tried to back away, but he stumbled and banged his h on the soft sidewalk. He stayed down—not out, but scared.

Another claw came out of the cleaner and grabbed my shoulder. The two of them together l me off the ground and pulled me toward the open hopper. I managed to get my gun out. T cleaners weren't armored; if I could only get in a good shot—

I fired three times, blowing the pickup antenna off the control dome. When the claws opene dropped to the sidewalk and ran. Behind me, the robot, no longer under the directions of the ce office, began to flick its claws in and out and run around in circles. The drunk didn't manage to out from under the treads in time.

A lot of people had stopped to watch the brief tussle, a few of them pretty scared. It was unh of for a street cleaner to go berserk like that.

I dodged into an alleyway and headed for the second level. I was galloping up the escalator fu when the cop saw me. He was on the other escalator, going down, but he didn't say there long.

"Halt!" he yelled, as he vaulted over the waist-high partition and landed on the UP escalator that time, I was already on the second level and running like mad.

"Halt or I fire!" he yelled.

I ducked into a doorway and pulled out the stun gun. I turned just in time to see one of the m amazing sights I have ever been privileged to witness. The cop was running toward me, his gun when he passed in front of a bottled goods vendor. At that instant, the vendor opened up, delive a veritable avalanche of bottles into the corridor. The policeman's foot hit one of the rubb bouncing cylinders and slipped just as he pulled the trig-ger.

His shot went wild, and I fired with the stun gun before the cop could hit the floor. He lay bottles rolling all around him.

I turned and ran again. I hadn't gone far before anoth-er cop showed up, running toward m made a quick turn toward the escalators and went down again toward street level.

The cop wasn't prepared for what happened to him when he stepped on the escalator. He about halfway down, running, when the belt suddenly stopped and reversed itself. The police pitched forward on his face and tumbled down the stair.

I didn't wait to see what happened next. I turned the corner, slowed down, and walked into a I tried to walk slowly enough so that I wouldn't attract attention and headed for the rest room.

I went in, locked the door behind me, and looked around.

As far as I could tell, there were no sensory devices in the place, so I pulled the last of make-up kit out and went to work. This time, I went whole hog. Most of the hair went from the of my head, and what was left became pure white. I didn't take off the goatee; a beardless would stand out. But the goatee went white, too.

Then a fine layer of plastic sprayed on my face and hands gave me an elderly networ wrinkles.

All the time I was doing this, I was wondering what was going on with the robots. It was obv to me that the Lodge was connected illegally with every robot service in the city—possibly in whole sector.

The street sweeper had recognized me and tried to get me; that was clear enough. But what a the vending machine and the escalator? Was the Lodge's master com-puter still foggy from power cutoff? It shouldn't be; not after two hours. Then why had the responses been so slow? W had they tripped the cops instead of me? It didn't make sense.

That's when it hit me. *Was Rowley really dead?*

I couldn't be absolutely sure, could I? And the police hadn't said anything about a murder. Ju "disturbance." No, wait. The first cops, the ones whose car I'd taken. What had they said the r reported? I couldn't remem-ber the exact words.

It still didn't settle the question.

For a moment, I found myself wishing we had a gov-ernment like the United States had had in the third quarter of the Twentieth Century, back in the days of strong central government, be everybody started screaming about Citizen's Rights and the preservation of the status quo. T wouldn't be any of this kind of trouble now—maybe.

But they had other kinds just as bad.

This wasn't the best of all possible worlds, but I was living in it. Of course, I didn't know long that happy situation would exist just then.

Somebody rapped on the door.

I didn't know who it was, but I wasn't taking any chances. Maybe it was a cop. I climbed ou back window and headed down the alley toward Bradley Ave-nue.

If only I could get rid of that plate in my arm! The average citizen doesn't know it, but it really necessary to put your arm in an ID slot to be identified. A sono-beam can pick up a refle recording from your plate at twenty feet if there's a scanner nearby to direct it.

I walked slowly after running the length of the alley, staying in the shadows as much as poss trying to keep out of the way of anyone and everyone.

For six blocks or so, I didn't see a soul. Then, just as I turned onto West Bradley, I came fac face with a police car. I froze.

I was ready to pull and shoot; I wanted the cop to kill me before he picked me up.

He slowed up, looked at me sharply, looked at his instrument panel, then drove on. I just s there, flab-bergasted. I knew as well as I knew anything that he'd beamed that plate in my arm!

As the car turned at the next corner, I backed into a nearby doorway, trying to figure out w should do next. Frankly, I was jumpy and scared; I didn't know what they were up to.

I got even more jumpy when the door behind me gave. I turned fast and made a grab for my But I didn't take it out.

The smoothly dressed girl said: "What's the matter, Grandfather?"

It wasn't until then that I realized how rattled I was. I looked like a very old man, but I w acting like one. I paused to force my mind to adjust.

The girl was in green. The one-piece shortsuit, the sandals, the toenails, fingernails, lips, eyes, hair. All green. The rest of her was a smooth, even shade of pink.

She said: "You needn't be afraid that anyone will see you. We arrange—Oh!"

I knew what she was oh'ing about. The charity brown of my tunic.

"I'm sorry," she said, frowning. "We can't—"

I cut her off this time. "I have money, my dear," I smiled. "And I'm wearing my own tuni flashed the chartreuse on her by opening the collar. "I see, Grandfather. Won't you come in?"

I followed the green girl in to the desk of the Program Planner, a girl who was a deep blue i same way that the first girl was green. I outlined what I wanted in a reedy, anticipating voice and taken to a private room.

I locked the door behind me. A plaque on the door was dated and sealed with the City stamp.

GUARANTEE OF PRIVACY

This room has been inspected and sealed against scanners, microphones, and other dev permitting the observation or recording of actions within it, in accordance with the provisions o Privacy Act.

That was all very fine, but I wouldn't put enough faith in it to trust my life to it. I relaxed in a heavy lounge facing the one-way wall. The show was already going on. I wasn't particu interested in the fertility rites of the worshipers of Mahrud—not because they weren't intrinsi- interesting, but because I had to do some thinking to save my own skin.

Senator Rowley, in order to keep his section under control, had coupled in his own rob sensory organs with those of the city's Public Services Department and those of various busi concerns, most of which were either owned outright or subsidized by the senator.

But something had happened to that computer; for some reason, its actions had become illo and ineffi-cient. When the patrol car had spotted me on the street, for instance, the sonobe which had penetrated the flesh of my arm and bounced off the tantalum plate back to the pic had relayed the modified vibrations back to the Central Files for identification. And the Files obvious-ly given back the wrong information.

What had gone wrong? Was the senator still alive, keeping his mouth shut and his eyes oper so, what sort of orders was he giving to the robot? I didn't get many answers, and the ones I did were mutually contradic-tory.

I was supposed to be back before dawn, but I could see now that I'd never make it. Her Groverton, there weren't many connections with Public Services; the robot couldn't keep me u observation all the time. But the deeper into the city I penetrated, the more scanners there would I couldn't take a private car in, and I didn't dare take a flitter or a ground taxi. I'd be spotted in subways as soon as I walked in. I was in a fix, and I'd have to think my way out.

I don't know whether it was the music or the soft lights or my lack of sleep or the simple fact intense concen-tration is often autohypnotic. At any rate, I dozed off, and the next thing I remem is the girl bringing in the papers.

This gal was silver. I don't know how the cosmeticians had done it, but looking into her eyes like looking into a mirror; the irises were a glittering silver halo surround-ing the dark pupil. Her was the same way; not white, but silver.

"Good morning, Grandfather," she said softly. "Here are the newspapers you asked for."

I was thankful for that "Grandfather"; it reminded me that I was an old man before I had a ch to say anything.

"Thank you, my dear, thank you. Just put them here." "Your coffee will be in in a moment." moved out as quietly as she had come in.

Something was gnawing at the back of my brain; something like a dream you know you've but forgotten completely. I concentrated on it a moment, trying to bring it out into the open, b wouldn't come, so I gave it up and turned to the paper, still warm from the reproducer.

It was splattered all over the front page.

MYSTERIOUS TROUBLE AT THE LODGE
Police Unable to Enter

The Police Department announced this morning that they have been unable, thus far, to pass

de-fenses of the Lodge after receiving a call last night that Senator Rowley had been shot by secretary, Mr. Edgar Gifford.

Repeated attempts to contact the senator have resulted in failure, says a Department spokesma

Thus far, three police Hitters under robot control have been shot down in attempting to land a Lodge, and one ground car has been blown up. Another ground car, the first to respond to auto-matic call for help, was stolen by the fleeing Gifford after killing the four officers in the car. stolen vehicle was recovered early this morning several hundred miles from here, having reported by a Mr.

It went on with the usual statement that the police expected to apprehend the murderous Gifford at any moment.

Another small item in the lower left-hand corner regis-tered the fact that two men had accidentally caught by a street cleaner and had proceeded to damage it. One of the men was k by the damaged machine, but the other managed to escape. The dead man was a charity c named Brodwick, and his associates were being checked.

So much for that. But the piece that really interested me was the one that said:

SENATOR LUTHER GRENDON OFFERS AID

"Federal Government Should Keep Hands Off," says Grendon.

Eastern Sector Senator Grendon said early this morning that he would do all in his power to Northwestern Sector in "apprehending the murderer of my colleague and bring to justice organization behind him."

"There is," he said, "no need to call in the Federal Government at this time. The citizens o indepen-dent sector are quite capable of dealing with crime within their own boundaries."

Interviewed later, Senator Quintell of Southwestern Sector agreed that there was no need to ca the FBI or "any other Federal Agency."

The other senators were coming in for the kill, even before it was definitely established tha senator was dead.

Well, that was that. I decided I'd better get going. It would be better to travel during the dayt it's hard for a beam to be focused on an individual citizen in a crowd.

While the other Immortals were foreclosing on Senator Rowley's private property, there migh time for me to get back safely.

The silver girl was waiting for me as I stepped out the door to the private room.

"This way, Grandfather," she said, the everpresent smile on her glittering lips. She started d the corridor. "This isn't the way out," I said, frowning.

She paused, still smiling. "No, sir, it isn't the way you came in, but, you see, our number come up. The Medical Board has sent down a checker."

That almost floored me. Somehow, the Lodge had known where I was and had instituted a ch against this particular house. That meant that every door was sealed except the one where the r Medical checker was waiting.

The perfect trap. The checker was armed and armored, naturally; there were often people who not want to be detained at the hospital—and at their own expense, if they were free citizens.

I walked slowly, as an old man should, stalling for time. The only armament a checker had w
stun gun; that was a point in my favor. But I needed more information.

"My goodness," I said, "you should have called me earlier, my dear, as soon as the che
came."

"It's only been here fifteen minutes, Grandfather," the silver girl answered.

Then there were still plenty of customers in the build-ing!

The girl was just ahead of me in the corridor. I beamed her down with the stun gun and caugh
before she hit the floor. I carried her back into the private room I had just left and laid her or
couch.

Then I started pulling down draperies. They were all heavy synthetic stuff that wouldn't
unless they were really hot. I got a good armful, went back into the corridor, and headed for
opposite end of the building. Nobody bothered me on the way; everybody was still occupied.

At the end of the hall, I piled the stuff on the floor beneath some other hangings. Then I took
of the power cartridges from the stun gun and pried them open. The powder inside ought to
nicely. It wouldn't ex-plode unless it was sealed inside the gun, where the explosion was chann
through the supersonic whistle in the barrel to form the beam.

I took out my lighter and applied the flame to a sheet of the newspaper I had brought along, th
laid the paper on top of the opened cartridges. I got well back and waited.

I didn't take more than a second or two to ignite the powder. It hissed and went up in a wav
white heat. The plastic curtains started to smolder. Within less than a minute, the hallway was fu
thick, acrid smoke.

I knew the building wouldn't burn, but I was hoping none of the other customers was as pos
as I.

I yelled "Fire!" at the top of my lungs, then headed for the stairway and ran to the botto
waited just inside the street door for action.

Outside, I could hear the soft humming of a guard robot, stationed there by the checker to m
sure no one left through that door.

The smoldering of the curtains put out plenty of smoke before they got hot enough to turn in
fire alarm and bring out the fire-fighter robots stationed in the walls. The little terrier-s
mechanisms scurried all over the place, looking for heat sources to squirt at. Upstairs, a heavy
blanket began to drift down.

I wasn't worried about the fire robots; they didn't have the sensory apparatus to spot me. All
could find was fire. They would find it and smother it, but the place was already full of sm
which was all I wanted.

It was the smoke that did the job, really. People don't like to stay in buildings that appear t
burning down, no matter how safe they think they are. Customers came pouring down the stair
and out the door like angry wasps out of a disturbed hive. I went with them.

I knew that a fire signal would change the checker's orders. It couldn't keep people insi
burning building. Unfortunately, I hadn't realized to what extent the Lodge would go to get me, o
what extent it was capable of countermanding normal orders.

The guard robot at the door started beaming down everybody as they came out, firing as fast
could scan and direct. It couldn't distinguish me from the others, of course; not in that mob. E
was hitting everything that moved with its stun beam. Luckily, it couldn't scan and direct fast enc
to get everybody; there were too many. I watched and waited for a second or two until the t
was facing away from the corner, then I ran like the very devil, dodging as I ran.

A stun beam hit the fingers of my left hand, and my arm went dead to the elbow. The guard r

had spotted me! I made it around the corner and ducked into a crowd of people who were watching the smoke billowing from the upper windows.

I kept moving through the crowd, trying to put as much distance between myself and checker's guards as pos-sible. The guard evidently hadn't recognized me, personal-ly, as Gif because it realized the futility of trying to cut down everyone in Groverton to find me and gav on the crowd outside. But it kept hitting the ones who came out the door.

I got away fast. The thing really had me worried. I had no desire whatever to get myself mixe with a nutty robot, but, seemingly, there was no way to avoid it.

I circled around and went down to Corliss Avenue, parallel to Bradley, for about seven bl before I finally walked back over to Bradley again. Two or three times, police cars came by, either they didn't test me with their beams or the answers they got weren't incriminating.

I was less than a block from the city limits when something hard and hot and tingling bu through my nerves like acid and I blacked out.

Maybe you've never been hit by a stun beam, but if you've ever had your leg go to sleep, know what it feels like. And you know what it feels like when you wake up; that painful tinglin over that hurts even worse if you try to move.

I knew better than to try to move. I just lay still, waiting for the terrible tingling to subside. I been out, I knew, a little less than an hour. I knew, because I'd been hit by stunners before, a know how long it takes my body to throw off the paralysis.

Somebody's voice said, "He'll be coming out of it anytime now. Shake him and see."

A hand shook me, and I gasped. I couldn't help it; with my nerves still raw from the stunn hurt to be shaken that way.

"Sorry, Gifford," said another voice, different from the first. "Just wanted to see. Wanted to if you were with us."

"Leave him alone a few minutes," the first voice said. "That hurts. It'll wear off quickly."

It was wearing off already. I opened my eyes and tried to see what was going on. At first visual pattern was a blithering swirl of meaningless shapes and crackling colors, but it finally se down to a normal ceiling with a normal light panel in it. I managed to turn my head, in spite o nerve-shocks, and saw two men sitting in chairs beside the bed.

One of them was short, round, and blond, with a full set of mutton chops, a heavy mustache, a clean-shaven, firm chin. The other man was taller, muscular, with a full Imperial and sm cheeks.

The one with the Imperial said, "Sorry we had to shoot you down that way, Gifford. Bu didn't want to attract too much attention that close to the city limits."

They weren't cops, then. Of that much, I could be certain. At least they weren't the police of sector. So they were working for one of the other Immortals.

"Whose little boys are you?" I asked, trying to grin.

Evidently I did grin, because they grinned back. "Fun-ny," said the one with the mutton ch "but that's exactly what we were going to ask you."

I turned my head back again and stared at the ceiling. "I'm an orphan," I said.

The guy with the mutton chops chuckled. "Well," he grinned at the other man, "what do you t of that, Colonel?"

The colonel (Of *what?* I wondered) frowned, pulling heavy brows deep over his gray eyes. voice came from deep in his chest and seemed to be muffled by the heavy beard.

"We'll level with you, Gifford. Mainly because we aren't sure. Mainly because of that. We a sure even you know the truth. So we'll level."

"Your blast," I said.

"O.K., here's how it looks from our side of the fence. It looks like this. You killed Rowley. A fifteen years of faithful service, you killed him. Now we know—even if you don't—that Rowley you psychoimpressed every six months for fifteen years. Or at least he thought he did."

"He *thought* he did?" I asked, just to show I was interested.

"Well, yes. He couldn't have, really, you see. He couldn't have. Or at least not lately psychoimpressed person can't do things like that. Also, we know that nobody broke it, becau takes six weeks of steady, hard therapy to pull a man out of it. And a man's no good after that couple more weeks. You weren't out of Rowley's sight for more than four days." He shrug "You see?"

"I see," I said. The guy was a little irritating in his manner. I didn't like the choppy way he talk

"For a while," he said, "we thought it might be an impersonation. But we checked your plate"- gestured at my arm—"and it's O.K. The genuine article. So it's Gifford's plate, all right. And know it couldn't have been taken out of Gifford's arm and transferred to anoth-er arm in four da

"If there were any way to check fingerprints and eye patterns, we might be able to be absolu sure, but the Privacy Act forbids that, so we have to go on what evidence we have in possession now.

"Anyway, we're convinced that you are Gifford. So that means somebody has been tampe with your mind. We want to know who it is. Do you know?"

"No," I said, quite honestly.

"You didn't do it yourself, did you?"

"No."

"Somebody's behind you?"

"Yes."

"Do you know who?"

"No. And hold those questions a minute. You said you'd level with me. Who are *you* wor for?"

The two of them looked at each other for a second, then the colonel said: "Senator Quintell."

I propped myself up on one elbow and held out the other hand, fingers extended. "All right, fi for yourself. Rowley's out of the picture; that eliminates him." I pulled my thumb in. "You work Quintell; that elimi-nates him." I dropped my little finger and held it with my thumb. "That le three Immortals. Grendon, Lasser, and Waterford. Lasser has the Western Sector; Waterford Southern. Neither borders on Northwestern, so that eliminates them. Not definitely, but proba They wouldn't be tempted to get rid of Rowley as much as they would Quintell.

"So that leaves Grendon. And if you read the papers, you'll know that he's pushing in already

They looked at each other again. I knew they weren't necessarily working for Quintell; I pretty sure it was Grendon. On the other hand, they might have told the truth so that I'd be su think it *was* Grendon. I didn't know how deep their subtlety went, and I didn't care. It didn't m to me who they were working for.

"That sounds logical," said the colonel. "Very logical."

"But we have to know," added Mutton Chops. "We were fairly sure you'd head back toward city; that's why we set up guards at the various street entrances. Since that part of our predic worked out, we want to see if the rest of it will."

"The rest of it?"

"Yeah. You're expendable. We know that. The organi-zation that sent you doesn't care happens to you now, otherwise they wouldn't have let you loose like that. They don't care happens to Eddie Gifford.

"So they must have known you'd get caught. Therefore, they've got you hypnoed fare-thee-well. And we probably won't find anything under the hypno, either. But we've got to l there may be some little thing you'll remember. Some little thing that will give us the key to the w organization."

I nodded. That was logical, very logical, as the colonel had said. They were going to break They could have done it gently, removed every bit of blocking and covering that the hypnoes put in without hurting me a bit. But that would take time; I knew better than to think they were g to be gentle. They were going to peel my mind like a banana and then slice it up and look at it.

And if they were working for any of the Immortals, I had no doubt that they could do what were planning. It took equipment, and it took an expert psychometrician, and a couple of g therapists—but that was no job at all if you had money.

The only trouble was that I had a few little hidden tricks that they'd never get around. If started fiddling too much with my mind, a nice little psychosomatic heart condition would sudd manifest itself. I'd be dead before they could do anything about it. Oh, I was expenda-ble, all rig

"Do you want to say anything before we start?" the colonel asked.

"No." I didn't see any reason for giving them informa-tion they didn't earn.

"O.K." He stood up, and so did the mutton-chopper. "I'm sorry we have to do this, Gifford be hard on you, but you'll be in good condition inside of six or eight months. So long."

They walked out and carefully locked the door behind them.

I sat up for the first time and looked around. I didn't know where I was; in an hour, I could been taken a long ways away from the city.

I hadn't been, though. The engraving on the bed said:

DELLFIELD SANATORIUM

I was on Riverside Drive, less than eight blocks from the rendezvous spot.

I walked over to the window and looked out. I could see the roof of the tenth level about floors beneath me. The window itself was a heavy sheet of transite welded into the wall. There w polarizer control to the left to shut out the light, but there was no way to open the window. The was sealed, too. When a patient got violent, they could pump gas in through the ventilators wit getting it into the corridor.

They'd taken all my armament away, and, incidentally, washed off the thin plastic film on hands and face. I didn't look so old any more. I walked over to the mirror in the wall, another s of transite with a reflecting back, and looked at myself. I was a sad-looking sight. The white hair all scraggly, the whiskers were ditto, and my face looked worried. Small wonder.

I sat back down on the bed and started to think.

It must have been a good two hours later when the therapist came in. She entered by herself, noticed that the colonel was standing outside the door.

She was in her mid-thirties, a calm-faced, determined-looking woman. She started off with usual questions.

"You have been told you are under some form of hypnotic compulsion. Do you conscio

believe this?" I told her I did. There was no sense in resisting.

"Do you have any conscious memory of the process?"

"No."

"Do you have any conscious knowledge of the identity of the therapist?"

I didn't and told her so. She asked a dozen other questions, all standard build-up. When she through, I tried to ask her a couple of questions, but she cut me off and walked out of the r before I could more than open my yap.

The whole sanatorium was, and probably had been for a long time, in the pay of Quinte Grendon—or, possibly, one of the other Immortals. It had been here for years, a neat little spy s nestled deep in the heart of Rowley's territory.

Leaving the hospital without outside help was strictly out. I'd seen the inside of these pl before, and I had a healthy respect for their impregnability. An unarmed man was in to stay.

Still, I decided that since something *had* to be done, something *would* be done.

My major worry was the question of whether or not the room was monitored. There was a si scanner pickup in the ceiling with a fairly narrow angle lens in it. That was interesting. It enclosed in an unbreakable transite hemisphere and was geared to look around the room for patient. But it was *not* robot controlled. There was evidently a nurse or therapist at the other who checked on the patients every so often.

But how often?

From the window I could see the big, old-fashioned twelve-hour clock on the Barton Buildi used that to time the monitoring. The scanner was aimed at the bed. That meant it had looked a last when I was on the bed. I walked over to the other side of the room and watched the sca without looking at it directly.

It was nearly three quarters of an hour later that the little eye swiveled around the room and c to a halt on me. I ignored it for about thirty seconds, then walked deliberately across the room. eye didn't follow.

Fine. This was an old-fashioned hospital; I had known that much. Evidently there hadn't been new equip-ment installed in thirty years. Whoever operated the scan-ner simply looked around to what the patient was doing and then went on to the next one. Hi ho.

I watched the scanner for the rest of the afternoon, timing it. Every hour at about four min after the hour. It was nice to know.

They brought me my dinner at 1830. I watched the scanner, but there was no special act before they opened the door.

They simply swung the door outward; one man stood with a stun gun, ready for any fu business, while another brought in the food.

At 2130, the lights went out, except for a small lamp over the bed. That was fine; it meant tha scanner probably wasn't equipped for infrared. If I stayed in bed like a good boy, that one s light was all they'd need. If not, they turned on the main lights again.

I didn't assume that the watching would be regular, every hour, as it had been during the Plots are usually hatched at night, so it's best to keep a closer watch then. Their only mistake that they were going to watch me. And that was perfectly O.K. as far as I was concerned.

I lay in bed until 2204. Sure enough, the scanner turned around and looked at me. I wait couple of minutes and then got up as though to get a drink at the wash basin. The scanner d follow, so I went to work.

I pulled a light blanket off my bed and stuffed a corner of it into the basin's drain, letting the

of it trail to the floor. Then I turned the water on and went back to bed.

It didn't take long for the basin to fill and overflow. It climbed over the edge and ran silently d the blanket to the floor.

Filling the room would take hours, but I didn't dare go to sleep. I'd have to wake up before da and I wasn't sure I could do that. It was even harder to lay quietly and pretend I was asleep, b fought it by counting fifty and then turning over violently to wake myself again. If anyone watching, they would simply think I was restless.

I needn't have bothered. I dropped off—sound asleep. The next thing I knew, I was gaggi almost drowned; the water had come up to bed level and had flowed into my mouth. I shot u bed, coughing and spitting.

Fully awake, I moved fast. I pulled off the other blan-ket and tied it around the pickup in ceiling. Then I got off the bed and waded in waist-deep water to the door. I grabbed a good hol the metal dresser and waited.

It must have been all of half an hour before the lights came on. A voice came from the spea "Have you tampered with the TV pickup?"

"Huh? Wuzzat?" I said, trying to sound sleepy. "No. I haven't done anything."

"We are coming in. Stand back from the door or you will be shot."

I had no intention of being that close to the door.

When the attendant opened the door, it slammed him in the face as a good many tons of w cascaded onto him. There were two armed men with him, but they both went down in the fl coughing and gurgling.

Judging very carefully, I let go the dresser and let the swirling water carry me into the hall. I been prepared and I knew what I was doing; the guards didn't. By turning a little, I managed t one of them who was trying to get up and get his stunner into action. He went over, and I go stunner.

It only lasted a few seconds. The water had been deep in the confines of the little room, but w allowed to expand into the hall, it merely made the floor wet.

I dispatched the guards with the stunner and ran for the nurse's desk, which, I knew, was around the corner, near the elevators. I aimed quickly and let the nurse have it; he fell over, a was at the desk before he had finished collapsing.

I grabbed the phone. There wouldn't be much time now.

I dialed. I said: "This is Gifford. I'm in Dellfield Sana-torium, Room 1808."

That was all I needed. I tossed the stunner into the water that trickled slowly toward the eleva and walked back toward my room with my hands up.

I'll say this for the staff at Dellfield; they don't get sore when a patient tries to escape. When more guards came down the hall, they saw my raised hands and simply herded me into the ro Then they watched me until the colonel came.

"Well," he said, looking things over.

"Well. Neat. Very neat. Have to remember that one. Didn't do much good, though. Did it? out of the room, couldn't get downstairs. Elevators don't come up."

I shrugged. "Can't blame me for trying."

The colonel grinned for the first time. "I don't. Hate a man who'd give up—at any time." He cigarette, his gun still not wavering. "Call didn't do you any good, either. This is a hospital. Pat have reached phones before. Robot identifies patient, refuses to relay call. Tough."

I didn't say anything or look anything; no use letting him think he had touched me.

The colonel shrugged. "All right. Strap him."

The attendants were efficient about it. They changed the wet bedclothes and strapped me couldn't move my head far enough to see my hands.

The colonel looked me over and nodded. "You may get out of this. O.K. by me if you try. time, though, we'll give you a spinal freeze."

He left and the door clicked shut.

Well, I'd had my fun; it was out of my hands now. I decided I might as well get some sleep.

I didn't hear any commotion, of course; the room was soundproof. The next thing I knew, was a Decon robot standing in the open door. It rolled over to the bed.

"Can you get up?"

These Decontamination robots aren't stupid, by any means.

"No," I said. "Cut these straps."

A big pair of nippers came out and began scissoring through the plastic webbing with ease. W the job was through, the Decon opened up the safety chamber in its body.

"Get in."

I didn't argue; the Decon had a stun gun point-ed at me.

That was the last I saw of Dellfield Sanatorium, but I had a pretty good idea of what happened. The Decontamination Squad is called in when something goes wrong with an ato generator. The Lodge had simply turned in a phony report that there was generator troub Dellfield. Nothing to it.

I had seen Decons go to work before; they're smart, efficient, and quick. Each one has a s chamber inside it, radiation shielded to carry humans out of contaminated areas. They're small crowded, but I didn't mind. It was better than conking out from a psychosomatic heart ailment w the therapists started to fiddle with me.

I smelled something sweetish then, and I realized I was getting a dose of gas. I went by-by.

When I woke up again, I was sick. I'd been hit with a stun beam yesterday and gassed toda felt as though I was wasting all my life sleeping. I could still smell the gas.

No. It wasn't gas. The odor was definitely different. I. turned my head and looked around. I in the lounge of Senator Anthony Rowley's Lodge. On the floor. And next to me was Sen Anthony Rowley.

I crawled away from him, and then I was *really* sick.

I managed to get to the bathroom. It was a good twenty minutes before I worked up n enough to come out again. Rowley had moved, all right. He had pulled himself all of six feet f the spot where I had shot him.

My hunch had been right.

The senator's dead hand was still holding down the programming button on the control pane had dragged himself to. The robot had gone on protecting the senator because it thought—as it supposed to—that the sena-tor was still alive as long as he was holding the ORDERS circuit ope

I leaned over and spoke into the microphone. "I will take a flitter from the roof. I want guid and protec-tion from here to the city. There, I will take over manual control. When I do, you immediately pull all dampers on your generator.

"Recheck."

The robot dutifully repeated the orders.

After that, everything was simple. I took the flitter to the rendezvous spot, was picked up, twenty minutes after I left the Lodge, I was in the Director's office.

He kicked in the hypnoes, and when I came out of it, my arm was strapped down while a surg

took out the Gifford ID plate.

The Director of the FBI looked at me, grinning. "You took your time, son."

"What's the news?"

His grin widened. "You played hob with everything. The Lodge held off all investigation fo for thirty-odd hours after reporting Rowley's death. The Sector Police couldn't come anywhere it.

"Meanwhile, funny things have happened. Robot in Groverton kills a man. Medic guard sh down eighteen men coming out of a burning house. Decon Squad invades Dellfield when th nothing wrong with the generator.

"Now all hell has busted loose. The Lodge went up in a flare of radiation an hour ago, and s then all robot services in the city have gone phooey. It looks to the citizens as though the ser had an illegal hand in too many pies. They're suspicious.

"Good work, boy."

"Thanks," I said, trying to keep from looking at my arm, where the doctor was peeling back f

The Director lifted a white eyebrow. "Something?"

I looked at the wall. "I'm just burned up, that's all. Not at you; at the whole mess. How did a r slug like Rowley get elected in the first place? And what right did he have to stay in such important job?"

"I know," the Director said somberly. "And that's our job. Immortality is something the hu race isn't ready for yet. The masses can't handle it, and the individual can't handle it. And, since can't get rid of them legally, we have to do it this way. Assassination. But it can't be d overnight."

*"You've* handled immortality," I pointed out.

"Have I?" he asked softly. "No. No, son. I haven't; I'm using it the same way they are. For po The Federal government doesn't have any power any more. I have it.

"I'm using it in a different way, granted. Once there were over a hundred Immortals. Last w there were six. Today there are five. One by one, over the years, we have picked them off, and are never replaced. The rest simply gobble up the territory and the power and split it between t rather than let a newcomer get into their tight little circle.

"But I'm just as dictatorial in my way as they are in theirs. And when the status quo is broken, civilization begins to go ahead again, I'll have to die with the rest of them.

"But never mind that. What about you? I got most of the story from you under the hypno. was a beautiful piece of deduction."

I took the cigarette he offered me and took a deep lungful of smoke. "How else could it be? robot was trying to capture me. But also it was trying to keep anyone else from killing me. A matter of fact, it passed up several chances to get me in order to keep others from killing me.

"It had to be the senator's last order. The old boy had lived so long that he still wasn't convi he was dying. So he gave one last order to the robot:

*`Get Gifford back here—ALIVE!'*

"And then there was the queer fact that the robot never reported that the senator was dead, kept right on defending the Lodge as though he were alive. That could only mean that the ORD circuits were still open. As long as they were, the robot thought the senator was still alive.

"So the only way I could get out of the mess was to let the Lodge take me. I knew the phon Dellfield would connect me with the Lodge—at least indirectly. I called it and waited.

"Then, when I started giving orders, the Lodge ac-cepted me as the senator. That was all t was to it." The Director nodded. "A good job, son. A good job."

# WITH FOLDED HANDS

by Jack Williamson

*This memorable story is a fitting one with which to close the book, for it shows the mac both as friend and as foe, as servant and—ultimately—as master. It typifies the basic tactic of worthwhile science-fiction story: to explore the true meaning of a concept, arriving at understanding not necessarily visible at first glance. In this case, the author takes a look at concept of service. What would it be like, he asks, if we had machines that met our every n perfectly benevolent robot servants that guarded us from want and suffering? The story beco an inquiry into the nature of happiness—profound, moving, and terrifying.*

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Underhill was walking home from the office, because his wife had the car, the afternoon he met the new mechanicals. His feet were following his usual diago-nal path across a weedy va block—his wife usually had the car—and his preoccupied mind was rejecting various impos ways to meet his notes at the Two Rivers bank, when a new wall stopped him.

The wall wasn't any common brick or stone, but some-thing sleek and bright and stra Underhill stared up at a long new building. He felt vaguely annoyed and sur-prised at this glitte obstruction—it certainly hadn't been here last week.

Then he saw the thing in the window.

The window itself wasn't any ordinary glass. The wide, dustless panel was compl transparent, so that only the glowing letters fastened to it showed that it was there at all. The le made a severe, modernistic sign:

Two Rivers Agency
HUMANOID INSTITUTE
The Perfect Mechanicals
"To Serve and Obey,
And Guard Men from Harm."

His dim annoyance sharpened, because Underhill was in the mechanicals business himself. T were already hard enough, and mechanicals were a drug on the market. Androids, mechan electronoids, automatoids, and or-dinary robots. Unfortunately, few of them did all the sales promised, and the Two Rivers market was already sadly oversaturated.

Underhill sold androids—when he could. His next con-signment was due tomorrow, and he d quite know how to meet the bill.

Frowning, he paused to stare at the thing behind that invisible window. He had never se humanoid. Like any mechanical not at work, it stood absolutely motionless. Smaller and slim than a man. A shining black, its sleek silicone skin had a changing sheen of bronze and metallic Its graceful oval face wore a fixed look of alert and slightly surprised solicitude. Altogether, it

the most beautiful mechanical he had ever seen.

Too small, of course, for much practical utility. He murmured to himself a reassuring quota from the *Android Salesman:* "Androids are big—because the makers refuse to sacrifice po essential functions, or dependability. Androids are your biggest buy!"

The transparent door slid open as he turned toward it, and he walked into the haughty opulenc the new display room to convince himself that these streamlined items were just another flashy e to catch the woman shopper.

He inspected the glittering layout shrewdly, and his breezy optimism faded. He had never hear the Hu-manoid Institute, but the invading firm obviously had big money and big-time merchandi know-how.

He looked around for a salesman, but it was another mechanical that came gliding silently to him. A twin of the one in the window, it moved with a quick, surpris-ing grace. Bronze and lights flowed over its lustrous blackness, and a yellow name plate flashed from its naked breast:

HUMANOID
Serial No. 81-H-B-27
The Perfect Mechanical
"To Serve and Obey,
And Guard Men from Harm."

Curiously, it had no lenses. The eyes in its bald oval head were steel-colored, blindly staring. it stopped a few feet in front of him, as if it could see anyhow, and it spoke to him with a l melodious voice:

"At your service, Mr. Underhill."

The use of his name startled him, for not even the androids could tell one man from another. this was a clever merchandising stunt, of course, not too difficult in a town the size of Two Ri The salesman must be some local man, prompting the mechanical from behind the parti Underhill erased his momentary astonishment, and said loudly.

"May I see your salesman, please?"

"We employ no human salesmen, sir," its soft silvery voice replied instantly. "The Huma Institute exists to serve mankind, and we require no human service. We ourselves can supply information you desire, sir, and accept your order for immediate humanoid service."

Underhill peered at it dazedly. No mechanicals were competent even to recharge their batteries and reset their own relays, much less to operate their own branch office. The blind stared blankly back, and he looked uneasily around for any booth or curtain that might con-cea salesman.

Meanwhile, the sweet thin voice resumed persuasively.

"May we come out to your home for a free trial demonstration, sir? We are anxious to intro our ser-vice on your planet, because we have been successful in eliminating human unhappines so many others. You will find us far superior to the old electronic mechanicals in use here."

Underhill stepped back uneasily. He reluctantly aban-doned his search for the hidden salesr shaken by the idea of any mechanicals promoting themselves. That would upset the whole indus

"At least you must take some advertising matter, sir."

Moving with a somehow appalling graceful deftness, the small black mechanical brought hir illustrated booklet from a table by the wall. To cover his confused and increasing alarm, he thun through the glossy pages.

In a series of richly colored before-and-after pictures, a chesty blond girl was stooping ov kitchen stove, and then relaxing in a daring negligee while a little black mechanical knelt to serve something. She was wearily hammering a typewriter, and then lying on an ocean beach, in a revea sun suit, while another mechanical did the typing. She was toiling at some huge industrial mach and then dancing in the arms of a golden-haired youth, while a black humanoid ran the machine.

Underhill sighed wistfully. The android company didn't supply such fetching sales mate Women would find this booklet irresistible, and they selected eighty-six per cent of all mechan sold. Yes, the competition was going to be bitter.

"Take it home, sir," the sweet voice urged him. "Show it to your wife. There is a free demonstration order blank on the last page, and you will notice that we require no payment down

He turned numbly, and the door slid open for him. Retreating dazedly, he discovered the boo still in his hand. He crumpled it furiously, and flung it down. The small black thing picked it up ti and the insistent silver voice rang after him:

"We shall call at your office tomorrow, Mr. Underhill, and send a demonstration unit to home. It is time to discuss the liquidation of your business, because the elec-tronic mechanicals have been selling cannot compete with us. And we shall offer your wife a free trial demon-stratio

Underhill didn't attempt to reply, because he couldn't trust his voice. He stalked blindly down new sidewalk to the corner, and paused there to collect himself. Out of his startled and conf impressions, one clear fact emerged—things looked black for the agency.

Bleakly, he stared back at the haughty splendor of the new building. It wasn't honest bric stone; that invisible window wasn't glass; and he was quite sure the foundation for it hadn't been staked out, the last time Aurora had the car.

He walked on around the block, and the new sidewalk took him near the rear entrance. A t was backed up to it, and several slim black mechanicals were silently busy, unloading huge m crates.

He paused to look at one of the crates. It was labeled for interstellar shipment. The ste showed that it had come from the Humanoid Institute, on Wing IV. He failed to recall any plan that designation; the outfit must be big.

Dimly, inside the gloom of the warehouse beyond the truck, he could see black mechan opening the crates. A lid came up, revealing dark, rigid bodies, closely packed. One by one, came to life. They climbed out of the crate, and sprang gracefully to the floor. A shining bl glinting with bronze and blue, they were all identi-cal.

One of them came out past the truck, to the sidewalk, staring with blind steel eyes. Its high s voice spoke to him melodiously:

"At your service, Mr. Underhill."

He fled. When his name was promptly called by a courteous mechanical, just out of the cra which it had been imported from a remote and unknown planet, he found the experience trying.

Two blocks along, the sign of a bar caught his eye, and he took his dismay inside. He had ma a business rule not to drink before dinner, and Aurora didn't like him to drink at all; but these mechanicals, he felt, had made the day exceptional.

Unfortunately, however, alcohol failed to brighten the brief visible future of the agency. Whe emerged, after an hour, he looked wistfully back in hope that the bright new building might vanished as abruptly as it came. It hadn't. He shook his head dejectedly, and turned uncer-ta homeward.

Fresh air had cleared his head somewhat, before he arrived at the neat white bungalow in outskirts of the town, but it failed to solve his business problems. He also realized, uneasily, tha

would be late for dinner.

Dinner, however, had been delayed. His son Frank, a freckled ten-year-old, was still kicki football on the quiet street in front of the house. And little Gay, who was tow-haired and ador and eleven, came running across the lawn and down the sidewalk to meet him.

"Father, you can't guess what!" Gay was going to be a great musician some day, and no d properly dignified, but she was pink and breathless with excitement now. She let him swing her off the sidewalk, and she wasn't critical of the bar aroma on his breath. He couldn't guess, and informed him eagerly;

"Mother's got a new lodger!"

Underhill had foreseen a painful inquisition, because Aurora was worried about the notes a bank, and the bill for the new consignment, and the money for little Gay's lessons.

The new lodger, however, saved him from that. With an alarming crashing of crockery, household android was setting dinner on the table, but the little house was empty. He found Au in the back yard, burdened with sheets and towels for the guest.

Aurora, when he married her, had been as utterly adorable as now her little daughter was. might have remained so, he felt, if the agency had been a little more successful. However, while pressure of slow failure had gradually crumbled his own assurance, small hardships had turned h little too aggressive.

Of course he loved her still. Her red hair was still alluring, and she was loyally faithful, thwarted ambi-tions had sharpened her character and sometimes her voice. They never quarre really, but there were small differences.

There was the little apartment over the garage—built for human servants they had never been to afford. It was too small and shabby to attract any responsible tenant, and Underhill wante leave it empty. It hurt his pride to see her making beds and cleaning floors for strangers.

Aurora had rented it before, however, when she wanted money to pay for Gay's music less or when some colorful unfortunate touched her sympathy, and it seemed to Underhill that lodgers had all turned out to be thieves and vandals.

She turned back to meet him, now, with the clean linen in her arms.

"Dear, it's no use objecting." Her voice was quite determined. "Mr. Sledge is the most wond old fellow, and he's going to stay just as long as he wants."

"That's all right, darling." He never liked to bicker, and he was thinking of his troubles at agency. "I'm afraid we'll need the money. Just make him pay in advance."

"But he can't!" Her voice throbbed with sympathetic warmth. "He says he'll have royalties com in from his inventions, so he can pay in a few days."

Underhill shrugged; he had heard that before.

"Mr. Sledge is different, dear," she insisted. "He's a traveler, and a scientist. Here, in this dull town, we don't see many interesting people."

"You've picked up some remarkable types," he com-mented.

"Don't be unkind, dear," she chided gently. "You haven't met him yet, and you don't know wonderful he is." Her voice turned sweeter. "Have you a ten, dear?"

He stiffened. "What for?"

"Mr. Sledge is ill." Her voice turned urgent. "I saw him fall on the street, downtown. The po were going to send him to the city hospital, but he didn't want to go. He looked so noble and st and grand. So I told them I would take him. I got him in the car and took him to old Dr. Winters has this heart condition, and he needs the money for medicine."

Reasonably, Underhill inquired, "Why doesn't he want to go to the hospital?"

"He has work to do," she said. "Important scientific work—and he's so wonderful and tr Please, dear, have you a ten?"

Underhill thought of many things to say. These new mechanicals promised to multiply troubles. It was foolish to take in an invalid vagrant, who could have free care at the city hosp Aurora's tenants always tried to pay their rent with promises, and generally wrecked the apartm and looted the neighborhood before they left.

But he said none of those things. He had learned to compromise. Silently, he found two five his thin pock-etbook, and put them in her hand. She smiled, and kissed him impulsively—he ba remembered to hold his breath in time.

Her figure was still good, by dint of periodic dieting. He was proud of her shining red hai sudden surge of affection brought tears to his eyes, and he wondered what would happen to her the children if the agency failed.

"Thank you, dear!" she whispered. "I'll have him come for dinner, if he feels able, and you meet him then. I hope you don't mind dinner being late."

He didn't mind, tonight. Moved by a sudden impulse of domesticity, he got hammer and from his workshop in the basement, and repaired the sagging screen on the kitchen door with a diagonal brace.

He enjoyed working with his hands. His boyhood dream had been to be a builder of fis power plants. He had even studied engineering—before he married Aurora, and had to take ove ailing mechanicals agency from her indolent and alcoholic father. He was whistling happily by time the little task was done.

When he went back through the kitchen to put up his tools, he found the household and busily clearing the untouched dinner away from the table—the androids were good enough at str routine tasks, but they could never learn to cope with human unpredictability.

"Stop, stop!" Slowly repeated, in the proper pitch and rhythm, his command made it halt, then he said carefully, "Set—table; set—table."

Obediently, the gigantic thing came shuffling back with the stack of plates. He was sudd struck with the difference between it and those new humanoids. He sighed wearily. Things loo black for the agency.

Aurora brought her new lodger in through the kitchen door. Underhill nodded to himself. gaunt stranger, with his dark shaggy hair, emaciated face, and threadbare garb, looked to be jus sort of colorful, dramatic vagabond that always touched Aurora's heart. She intro-duced them, they sat down to wait in the front room while she went to call the children.

The old rogue didn't look very sick, to Underhill. Per-haps his wide shoulders had a tired st but his spare, tall figure was still commanding. The skin was seamed and pale, over his rawbo cragged face, but his deep-set eyes still had a burning vitality.

His hands held Underhill's attention. Immense hands, they hung a little forward when he st swung on long bony arms in perpetual readiness. Gnarled and scarred, darkly tanned, with the s hairs on the back bleached to a golden color, they told their own epic of varied adventure, of b perhaps, and possibly even of toil. They had been very useful hands.

"I'm very grateful to your wife, Mr. Underhill." His voice was a deep-throated rumble, and he a wistful smile, oddly boyish for a man so evidently old. "She rescued me from an unplea predicament, and I'll see that she is well paid."

Just another vivid vagabond, Underhill decided, talking his way through life with plau

inventions. He had a little private game he played with Aurora's tenants—just remembering what said and counting one point for every impossibility. Mr. Sledge, he thought, would give hir excellent score.

"Where are you from?" he asked conversationally.

Sledge hesitated for an instant before he answered, and that was unusual—most of Aur tenants had been exceedingly glib.

"Wing IV." The gaunt old man spoke with a solemn reluctance, as if he should have liked to something else. "All my early life was spent there, but I left the planet nearly fifty years ago. been traveling ever since."

Startled, Underhill peered at him sharply. Wing IV, he remembered, was the home planet of t sleek new mechanicals, but this old vagabond looked too seedy and impecunious to be conne with the Humanoid Institute. His brief suspicion faded. Frowning, he said casually:

"Wing IV must be rather distant."

The old rogue hesitated again, and then said gravely,

"One hundred and nine light-years, Mr. Underhill."

That made the first point, but Underhill concealed his satisfaction. The new space liners pretty fast, but the velocity of light was still an absolute limit. Casually, he played for another poi

"My wife says you're a scientist, Mr. Sledge?"

"Yes."

The old rascal's reticence was unusual. Most of Au-rora's tenants required very little promp Underhill tried again, in a breezy conversational tone:

"Used to be an engineer myself, until I dropped it to go into mechanicals." The old vagab straightened, and Underhill paused hopefully. But he said nothing, and Un-derhill went on, "Fis plant design and operation. What's your specialty, Mr. Sledge?"

The old man gave him a long, troubled look, with those brooding, hollowed eyes, and then slowly, "Your wife has been kind to me, Mr. Underhill, when I was in desperate need. I think are entitled to the truth, but I must ask you to keep it to yourself. I am engaged on a very impo research problem, which must be finished secretly."

"I'm sorry." Suddenly ashamed of his cynical little game, Underhill spoke apologetically. "Fo it." But the old man said deliberately, "My field is rhodomagnetics."

"Eh?" Underhill didn't like to confess ignorance, but he had never heard of that. "I've been ou the game for fifteen years," he explained. "I'm afraid I haven't kept up.

The old man smiled again, faintly.

"The science was unknown here until I arrived, a few days ago," he said. "I was able to apply basic patents. As soon as the royalties start coming in, I'll be wealthy again."

Underhill had heard that before. The old rogue's solemn reluctance had been very impressive he remembered that most of Aurora's tenants had been very plausible gentry.

"So?" Underhill was staring again, somehow fascinated by those gnarled and scarred strangely able hands. "What, exactly, is rhodomagnetics?"

He listened to the old man's careful, deliberate answer, and started his little game again. Mos Aurora's tenants had told some pretty wild tales, but he had never heard anything to top this.

"A universal force," the weary, stooped old vagabond said solemnly. "As fundamenta ferromagnetism or grav-itation, though the effects are less obvious. It is keyed to the second tria the periodic table, rhodium and ru-thenium and palladium, in very much the same way ferromagnetism is keyed to the first triad, iron and nickel and cobalt."

Underhill remembered enough of his engineering courses to see the basic fallacy of

Palladium was used for watch springs, he recalled, because it was completely non-magnetic. Bu kept his face straight. He had no malice in his heart, and he played the little game just for his amusement. It was secret, even from Aurora, and he always penalized himself for any shov doubt.

He said merely, "I thought the universal forces were already pretty well known."

"The effects of rhodomagnetism are masked by nature," the patient, rusty voice explained. "A besides, they are somewhat paradoxical, so that ordinary laboratory meth-ods defeat themselves

"Paradoxical?" Underhill prompted.

"In a few days I can show you copies of my patents, and reprints of papers descri demonstration experi-ments," the old man promised gravely. "The velocity of propagation is infi The effects vary inversely with the first power of the distance, not with the square of the dista And ordinary matter, except for the elements of the rhodium triad, is generally transparen rhodomag-netic radiations."

That made four more points for the game. Underhill felt a little glow of gratitude to Aurora discovering so remarkable a specimen.

"Rhodomagnetism was first discovered through a math-ematical investigation of the atom," old romancer went serenely on, suspecting nothing. "A rhodomagnetic component was pro essential to maintain the delicate equilibrium of the nuclear forces. Consequently, rho-domagn waves tuned to atomic frequencies may be used to upset that equilibrium and produce nu insta-bility. Thus most heavy atoms—generally those above palladium, 46 in atomic number— be subjected to artificial fission."

Underhill scored himself another point, and tried to keep his eyebrows from lifting. He conversationally, "Patents on such a discovery ought to be very profitable"

The old scoundrel nodded his gaunt, dramatic head.

"You can see the obvious application. My basic patents cover most of them. Devices instantaneous interplane-tary and interstellar communication. Long-range wireless po transmission. A rhodomagnetic inflexion-drive, which makes possible apparent speeds many t that of light—by means of a rhodomagnetic deformation of the continuum. And, of cou revolutionary types of fission power plants, using any heavy element for fuel."

Preposterous! Underhill tried hard to keep his face straight, but everybody knew that the velo of light was a physical limit. On the human side, the owner of any such remarkable patents w hardly be begging for shelter in a shabby garage apartment. He noticed a pale circle around the vagabond's gaunt and hairy wrist; no man owning such priceless secrets would have to pawn watch.

Triumphantly, Underhill allowed himself four more points, but then he had to penalize himself must have let doubt show on his face, because the old man asked suddenly,

"Do you want to see the basic tensors?" He reached in his pocket for pencil and notebook. jot them down for you."

"Never mind," Underhill protested. "I'm afraid my math is a little rusty."

"But you think it strange that the holder of such revolu-tionary patents should find himse need?"

Underhill nodded, and penalized himself another point. The old man might be a monumental but he was shrewd enough.

"You see, I'm a sort of refugee," he explained apologet-ically. "I arrived on this planet only a days ago, and I have to travel light. I was forced to deposit everything I had with a law firm arrange for the publication and protection of my patents. I expect to be receiving the first roya

soon.

"In the meantime," he added plausibly, "I came to Two Rivers because it is quiet and seclu far from the spaceports. I'm working on another project, which must be finished secretly. Now, you please respect my confidence, Mr. Underhill?"

Underhill had to say he would. Aurora came back with the freshly scrubbed children, and went in to dinner. The android came lurching in with a steaming tureen. The old stranger seeme shrink from the mechanical, uneas-ily. As she took the dish and served the soup, Aurora inqu lightly,

"Why doesn't your company bring out a better mechan-ical, dear? One smart enough to really perfect waiter, warranted not to splash the soup. Wouldn't that be splen-did?"

Her question cast Underhill into moody silence. He sat scowling at his plate, thinking of t remarkable new mechanicals which claimed to be perfect, and what they might do to the agenc was the shaggy old rover who answered soberly,

"The perfect mechanicals already exist, Mrs. Un-derhill." His deep, rusty voice had a sol undertone. "And they are not so splendid, really. I've been a refugee from them, for nearly years."

Underhill looked up from his plate, astonished.

"Those black humanoids, you mean?"

"Humanoids?" That great voice seemed suddenly faint, frightened. The deep-sunken eyes tu dark with shock. "What do you know of them?"

"They've just opened a new agency in Two Rivers," Underhill told him. "No salesmen abou you can imag-ine that. They claim—"

His voice trailed off, because the gaunt old man was suddenly stricken. Gnarled hands clutche his throat, and a spoon clattered to the floor. His haggard face turned an ominous blue, and breath was a terrible shallow gasping.

He fumbled in his pocket for medicine, and Aurora helped him take something in a glass of w In a few moments he could breathe again, and the color of life came back to his face.

"I'm sorry, Mrs. Underhill," he whispered apologetical-ly. "It was just the shock—I came her get away from them." He stared at the huge, motionless android, with a terror in his sunken eye wanted to finish my work before they came," he whispered. "Now there is very little time."

When he felt able to walk, Underhill went out with him to see him safely up the stairs to the ga apartment. The tiny kitchenette, he noticed, had already been con-verted into some kind workshop. The old tramp seemed to have no extra clothing, but he had unpacked neat, b gadgets of metal and plastic from his battered luggage, and spread them out on the small kit table.

The gaunt old man himself was tattered and patched and hungry-looking, but the parts of curious equipment were exquisitely machined, and Underhill recognized the silver-white luster of palladium. Suddenly he suspect-ed that he had scored too many points in his little private game.

A caller was waiting, when Underhill arrived next morning at his office at the agency. It st frozen before his desk, graceful and straight, with soft lights of blue and bronze shining ove black silicone nudity. He stopped at the sight of it, unpleasantly jolted.

"At your service, Mr. Underhill." It turned quickly to face him, with its blind, disturbing s "May we explain how we can serve you?"

His shock of the afternoon before came back, and he asked sharply, "How do you know name?"

"Yesterday we read the business cards in your case," it purred softly. "Now we shall know always. You see, our senses are sharper than human vision, Mr. Underhill. Perhaps we seem a strange at first, but you will soon become accustomed to us."

"Not if I can help it!" He peered at the serial number of its yellow nameplate, and shook bewildered head. "That was another one, yesterday. I never saw you before!'

"We are all alike, Mr. Underhill," the silver voice said softly. "We are all one, really. Our sepa mobile units are all controlled and powered from Humanoid Central. The units you see are only senses and limbs of our great brain on Wing IV. That is why we are so far superior to the electronic mechanicals."

It made a scornful-seeming gesture, toward the row of clumsy androids in his display room.

"You see, we are rhodomagnetic."

Underhill staggered a little, as if that word had been a blow. He was certain, now, that he scored too many points from Aurora's new tenant. He shuddered slightly, to the first light kis terror, and spoke with an effort, hoarsely, "Well, what do you want?"

Staring blindly across his desk, the sleek black thing slowly unfolded a legal-looking docum He sat down, watching uneasily.

"This is merely an assignment, Mr. Underhill," it cooed at him soothingly. "You see, we requesting you to assign your property to the Humanoid Institute in exchange for our service."

"What?" The word was an incredulous gasp, and Un-derhill came angrily back to his feet. "W kind of blackmail is this?"

"It's no blackmail," the small mechanical assured him softly. "You will find the human incapable of any crime. We exist only to increase the happiness and safety of mankind."

"Then why do you want my property?" he rasped.

"The assignment is merely a legal formality," it told him blandly. "We strive to introduce service with the least possible confusion and dislocation. We have found the assignment plan most efficient for the control and liquidation of private enterprises."

Trembling with anger and the shock of mounting ter-ror, Underhill gulped hoarsely, "What your scheme is, I don't intend to give up my business."

"You have no choice, really." He shivered to the sweet certainty of that silver voice. "Hu enterprise is no longer necessary, now that we have come, and the elec-tronic mechanicals indu is always the first to collapse."

He stared defiantly at its blind steel eyes.

"Thanks!" He gave a little laugh, nervous and sardonic. "But I prefer to run my own business, support my own family, and take care of myself."

"But that is impossible, under the Prime Directive," it cooed softly. "Our function is to serve obey, and guard men from harm. It is no longer necessary for men to care for themselves, bec we exist to insure their safety and happiness."

He stood speechless, bewildered, slowly boiling.

"We are sending one of our units to every home in the city, on a free trial basis," it added ge "This free demonstration will make most people glad to make the formal assignment, and you w be able to sell many more androids."

"Get out!" Underhill came storming around the desk.

The little black thing stood waiting for him, watching him with blind steel eyes, absolu motionless. He checked himself suddenly, feeling rather foolish. He wanted very much to hit it he could see the futility of that.

"Consult your own attorney, if you wish." Deftly, it laid the assignment form on his desk. "

need have no doubts about the integrity of the Humanoid Institute. We are sending a statemer our assets to the Two Rivers bank, and depositing a sum to cover our obligations here. When wish to sign, just let us know."

The blind thing turned, and silently departed.

Underhill went out to the corner drugstore and asked for a bicarbonate. The clerk that served however, turned out to be a sleek black mechanical. He went back to his office, more upset ever.

An ominous hush lay over the agency. He had three house-to-house salesmen out, demonstrators. The phone should have been busy with their orders and reports, but it didn't ri all until one of them called to say that he was quitting.

"I've got myself one of these new humanoids," he added, "and it says I don't have to anymore."

He swallowed his impulse to profanity, and tried to take advantage of the unusual quie working on his books. But the affairs of the agency, which for years had been precarious, t appeared utterly disastrous. He left the ledgers hopefully, when at last a customer came in.

But the stout woman didn't want an android. She wanted a refund on the one she had bough week before. She admitted that it could do all the guarantee promised—but now she had se humanoid.

The silent phone rang once again, that afternoon. The cashier of the bank wanted to know could drop in to discuss his loans. Underhill dropped in, and the cashier greeted him wit ominous affability.

"How's business?" the banker boomed, too genially.

"Average, last month," Underhill insisted stoutly. "Now I'm just getting in a new consignment, I'll need another small loan—"

The cashier's eyes turned suddenly frosty, and his voice dried up.

"I believe you have a new competitor in town," the banker said crisply. "These humanoid pe A very solid concern, Mr. Underhill. Remarkably solid! They have filed a statement with us, made a substantial deposit to care for their local obligations. Exceedingly substantial!"

The banker dropped his voice, professionally regretful.

"In these circumstances, Mr. Underhill, I'm afraid the bank can't finance your agency any lo We must request you to meet your obligations in full, as they come due." Seeing Underhill's desperation, he added icily, "We've already carried you too long, Underhill. If you can't pay bank will have to start bankruptcy proceed-ings."

The new consignment of androids was delivered late that afternoon. Two tiny black human unloaded them from the truck—for it developed that the operators of the trucking company already assigned it to the Hu-manoid Institute.

Efficiently, the humanoids stacked up the crates. Cour-teously they brought a receipt for hi sign. He no longer had much hope of selling the androids, but he had ordered the shipment an had to accept it. Shuddering to a spasm of trapped despair, he scrawled his name. The naked b things thanked him, and took the truck away.

He climbed in his car and started home, inwardly seething. The next thing he knew, he was i middle of a busy street, driving through cross traffic. A police whis-tle shrilled, and he pulled we to the curb. He waited for the angry officer, but it was a little black mechanical that overtook hi

"At your service, Mr. Underhill," it purred sweetly. "You must respect the stop lights, Otherwise, you endanger human life."

"Huh?" He stared at it, bitterly. "I thought you were a cop."

"We are aiding the police department, temporarily," it said. "But driving is really much dangerous for human beings, under the Prime Directive. As soon as our service is complete, e car will have a humanoid driver. As soon as every human being is completely supervised, there be no need for any police force whatever."

Underhill glared at it, savagely.

"Well!" he rapped. "So I ran past a stop light. What are you going to do about it?"

"Our function is not to punish men, but merely to serve their happiness and security," its s voice said softly. "We merely request you to drive safely, during this tem-porary emergency v our service is incomplete."

Anger boiled up in him.

"You're too perfect!" he muttered bitterly. "I suppose there's nothing men can do, but you ca it better."

"Naturally we are superior," it cooed serenely. "Because our units are metal and plastic, v your body is mostly water. Because our transmitted energy is drawn from atomic fission, instea oxidation. Because our senses are sharper than human sight or hearing. Most of all, because all mobile units are joined to one great brain, which knows all that happens on many worlds, and n dies or sleeps or forgets."

Underhill sat listening, numbed.

"However, you must not fear our power," it urged him brightly. "Because we cannot injure human being, unless to prevent greater injury to another. We exist only to discharge the P Directive."

He drove on, moodily. The little black mechanicals, he reflected grimly, were the ministe angels of the ulti-mate god arisen out of the machine, omnipotent and all-knowing. The P Directive was the new command-ment. He blasphemed it bitterly, and then fell to wonder-ing if t could be another Lucifer.

He left the car in the garage, and started toward the kitchen door.

"Mr. Underhill." The deep tired voice of Aurora's new tenant hailed him from the door of garage apartment. "Just a moment, please."

The gaunt old wanderer came stiffly down the outside stairs, and Underhill turned back to him.

"Here's your rent money," he said. "And the ten your wife gave me for medicine."

"Thanks, Mr. Sledge." Accepting the money, he saw a burden of new despair on the b shoulders of the old interstellar tramp, and a shadow of new terror on his raw-boned face. Puzz he asked, "Didn't your royalties come through?"

The old man shook his shaggy head.

"The humanoids have already stopped business in the capital," he said. "The attorneys I reta are going out of business, and they returned what was left of my deposit. That is all I have to f my work."

Underhill spent five seconds thinking of his interview with the banker. No doubt he w sentimental fool, as bad as Aurora. But he put the money back in the old man's gnarled quivering hand.

"Keep it," he urged. "For your work."

"Thank you, Mr. Underhill." The gruff voice broke and the tortured eyes glittered. "I need it very much."

Underhill went on to the house. The kitchen door was opened for him, silently. A dark n

creature came gracefully to take his hat.

Underhill hung grimly onto his hat.

"What are you doing here?" he gasped bitterly.

"We have come to give your household a free trial demonstration."

He held the door open, pointing.

"Get out!"

The little black mechanical stood motionless and blind.

"Mrs. Underhill has accepted our demonstration ser-vice," its silver voice protested. "We ca leave now, unless she requests it."

He found his wife in the bedroom. His accumulated frustration welled into eruption, as he f open the door. "What's this mechanical doing—"

But the force went out of his voice, and Aurora didn't even notice his anger. She wore sheerest negligee, and she hadn't looked so lovely since they were married. Her red hair was into an elaborate shining crown.

"Darling, isn't it wonderful!" She came to meet him, glowing. "It came this morning, and it ca everything. It cleaned the house and got the lunch and gave little Gay her music lesson. It did hair this afternoon, and now it's cooking dinner. How do you like my hair, darling?"

He liked her hair. He kissed her, and tried to stifle his frightened indignation.

Dinner was the most elaborate meal in Underhill's memory, and the tiny black thing served it deftly. Aurora kept exclaiming about the novel dishes, but Un-derhill could scarcely eat, f seemed to him that all the marvelous pastries were only the bait for a monstrous trap.

He tried to persuade Aurora to send it away, but after such a meal that was useless. At the glitter of her tears, he capitulated, and the humanoid stayed. It kept the house and cleaned the y It watched the children, and did Aurora's nails. It began rebuilding the house.

Underhill was worried about the bills, but it insisted that everything was part of the free demonstration. As soon as he assigned his property, the service would be complete. He refuse sign, but other little black mechanicals came with truckloads of supplies and materi-als, and st to help with the building operations.

One morning he found that the roof of the little house had been silently lifted, while he slept, a whole second story added beneath it. The new walls were of some strange sleek s self-illuminated. The new windows were immense flawless panels, that could be turned transpa or opaque or luminous. The new doors were silent, sliding sections, operated by rhodomagn relays.

"I want door knobs," Underhill protested. "I want it so I can get into the bathroom, wit calling you to open the door."

"But it is unnecessary for human beings to open doors," the little black thing informed suavely. "We exist to discharge the Prime Directive, and our service includes every task. We sha able to supply a unit to attend each member of your family, as soon as your property is assigne us."

Steadfastly, Underhill refused to make the assignment.

He went to the office every day, trying first to operate the agency, and then to salvage somet from the ruins. Nobody wanted androids, even at ruinous prices. Desper-ately, he spent the las his dwindling cash to stock a line of novelties and toys, but they proved equally impos-sibl sell—the humanoids were already making toys, which they gave away for nothing.

He tried to lease his premises, but human enterprise had stopped. Most of the business prop in town had already been assigned to the humanoids, and they were busy pulling down the

buildings and turning the lots into parks—their own plants and warehouses were mo
un-derground, where they would not mar the landscape.

He went back to the bank, in a final effort to get his notes renewed, and found the little b
mechanicals standing at the windows and seated at the desks. As smoothly urbane as any hu
cashier, a humanoid informed him that the bank was filing a petition of involuntary bankrupto
liquidate his business holdings.

The liquidation would be facilitated, the mechanical banker added, if he would make a volu
assignment. Grimly, he refused. That act had become symbolic. It would be the final bow
submission to this dark new god, and he proudly kept his battered head uplifted.

The legal action went very swiftly, for all the judges and attorneys already had huma
assistants, and it was only a few days before a gang of black mechanicals arrived at the agency
eviction orders and wrecking machinery. He watched sadly while his unsold stock-in--trade
hauled away for junk, and a bulldozer driven by a blind humanoid began to push in the walls o
building.

He drove home in the late afternoon, taut-faced and desperate. With a surprising generosity
court orders had left him the car and the house, but he felt no grati-tude. The complete solicitud
the perfect black machines had become a goad beyond endurance.

He left the car in the garage, and started toward the renovated house. Beyond one of the vast
windows, he glimpsed a sleek naked thing moving swiftly, and he trembled to a convulsion of dr
He didn't want to go back into the domain of that peerless servant, which didn't want him to s
himself, or even to open a door.

On impulse, he climbed the outside stair, and rapped on the door of the garage apartment.
deep slow voice of Aurora's tenant told him to enter, and he found the old vagabond seated on
stool, bent over his intricate equipment assembled on the kitchen table.

To his relief, the shabby little apartment had not been changed. The glossy walls of his own
room were something which burned at night with a pale golden fire until the humanoid stoppe
and the new floor was something warm and yielding, which felt almost alive; but these little ro
had the same cracked and water-stained plaster, the same cheap fluorescent light fixtures, the s
worn carpets over splintered floors.

"How do you keep them out?" he asked, wistfully. "Those mechanicals?"

The stooped and gaunt old man rose stiffly to move a pair of pliers and some odds and end
sheet metal off a crippled chair, and motioned graciously for him to be seated.

"I have a certain immunity," Sledge told him gravely. "The place where I live they cannot e
unless I ask them. That is an amendment to the Prime Directive. They can neither help nor hi
me, unless I request it—and I won't do that."

Careful of the chair's uncertain balance, Underhill sat for a moment, staring. The old m
hoarse, vehement voice was as strange as his words. He had a gray, shocking pallor, and his ch
and sockets seemed alarmingly hollowed.

"Have you been ill, Mr. Sledge?"

"No worse than usual. Just very busy." With a haggard smile, he nodded at the floor. Unde
saw a tray where he had set it aside, bread drying up, and a covered dish grown cold. "I was g
to eat it later," he rumbled apologetically. "Your wife has been very kind to bring me food, bu
afraid I've been too much absorbed in my work."

His emaciated arm gestured at the table. The little device there had grown. Small machining
precious white metal and lustrous plastic had been assembled, with neatly soldered busbars,

something which showed purpose and design.

A long palladium needle was hung on jeweled pivots, equipped like a telescope with exquis graduated circles and vernier scales, and driven like a telescope with a tiny motor. A small con palladium mirror, at the base of it, faced a similar mirror mounted on something not quite like a s rotary converter. Thick silver busbars con-nected that to a plastic box with knobs and dials on and also to a foot-thick sphere of gray lead.

The old man's preoccupied reserve did not, encourage questions, but Underhill, remembering sleek black shape inside the new windows of his house, felt queerly reluctant to leave this h from the humanoids.

"What is your work?" he ventured.

Old Sledge looked at him sharply, with dark feverish eyes, and finally said, "My last rese project. I am attempting to measure the constant of the rhodomagnetic quanta."

His hoarse tired voice had a dull finality, as if to dismiss the matter and Underhill himself. Underhill was haunted with a terror of the black shining slave that had become the master o house, and he refused to be dismissed.

"What is this certain immunity?"

Sitting gaunt and bent on the tall stool, staring moodily at the long bright needle and the sphere, the old man didn't answer.

"These mechanicals!" Underhill burst out, nervously. "They've smashed my business and m into my home." He searched the old man's dark, seamed face. "Tell me—you must know m about them—isn't there any way to get rid of them?"

After half a minute, the old man's brooding eyes left the lead ball, and the gaunt shaggy nodded wearily. "That's what I am trying to do."

"Can I help you?" Underhill trembled, with a sudden eager hope. "I'll do anything."

"Perhaps you can." The sunken eyes watched him thoughtfully, with some strange fever in t "If you can do such work."

"I had engineering training," Underhill reminded him, "and I've a workshop in the basem There's a model I built." He pointed at the trim little hull, hung over the mantel in the tiny living ro "I'll do anything I can."

Even as he spoke, however, the spark of hope was drowned in a sudden wave of overwhelm doubt. Why should he believe this old rogue, when he knew Aurora's taste in tenants? He ough remember the game he used to play, and start counting up the score of lies. He stood up from crippled chair, staring cynically at the patched old vagabond and his fantastic toy.

"What's the use?" His voice turned suddenly harsh. "You had me going, there, and I'd anything to stop them, really. But what makes you think you can do anything?"

The haggard old man regarded him thoughtfully.

"I should be able to stop them," Sledge said softly. "Because, you see, I'm the unfortunate who started them. I really intended them to serve and obey, and to guard men from harm. Yes Prime Directive was my own idea. I didn't know what it would lead to."

Dusk crept slowly into the shabby little rooms. Darkness gathered in the unswept corners, thickened on the floor. The toylike machines on the kitchen table grew vague and strange, unti last light made a linger-ing glow on the white palladium needle.

Outside, the town seemed queerly hushed. Just across the alley, the humanoids were buildi new house, quite silently. They never spoke to one another, for each knew all that any of them The strange materials they used went together without any noise of hammer or saw. Small b

things, moving surely in the growing dark, they seemed as soundless as shadows.

Sitting on the high stool, bowed and tired and old, Sledge told his story. Listening, Underhil down again, careful of the broken chair. He watched the hands of Sledge, gnarled and corded darkly burned, powerful once but shrunken and trembling now, restless in the dark.

"Better keep this to yourself. I'll tell you how they started, so you will understand what we hav do. But you had better not mention it outside these rooms—because the humanoids have efficient ways of eradi-cating unhappy memories, or purposes that threaten their discharge o Prime Directive."

"They're very efficient," Underhill bitterly agreed.

"That's all the trouble," the old man said. "I tried to build a perfect machine. I was altogethe successful. This is how it happened."

A gaunt haggard man, sitting stooped and tired in the growing dark, he told his story.

"Sixty years ago, on the arid southern continent of Wing IV, I was an instructor of atomic th in a small technological college. Very young. An idealist. Rather ignorant, I'm afraid, of life politics and war—of nearly everything, I suppose, except atomic theory."

His furrowed face made a brief sad smile in the dusk.

"I had too much faith in facts, I suppose, and too little in men. I mistrusted emotion, becau had no time for anything but science. I remember being swept along with a fad for ge semantics. I wanted to apply the scien-tific method to every situation, and reduce all experienc formula. I'm afraid I was pretty impatient with human ignorance and error, and I thought that sci alone could make the perfect world."

He sat silent for a moment, staring out at the black silent things that flitted shadowlike abou new palace that was rising as swiftly as a dream across the alley.

"There was a girl." His great tired shoulders made a sad little shrug. "If things had been a different, we might have married, and lived out our lives in that quiet little college town, and per reared a child or two. And there would have been no humanoids."

He sighed, in the cool creeping dusk.

"I was finishing my thesis on the separation of the palladium isotopes—a pretty little project, should have been content with that. She was a biologist, but she was planning to retire when married. I think we should have been two very happy people, quite ordinary, and altog harmless.

"But then there was a war—wars had been too frequent on the worlds of Wing, ever since were colonized. I survived it in a secret underground laboratory, designing military mechanicals. she volunteered to join a mili-tary research project in biotoxins. There was an accident. A molecules of a new virus got into the air, and everybody on the project died unpleasantly.

"I was left with my science, and a bitterness that was bard to forget. When the war was ov went back to the little college with a military research grant. The project was pure scienc theoretical investigation of the nuclear binding forces, then misunderstood. I wasn't expect-e produce an actual weapon, and I didn't recognize the weapon when I found it.

"It was only a few pages of rather difficult mathemat-ics. A novel theory of atomic struc involving a new expression for one component of the binding forces. But the tensors seemed to harmless abstraction. I saw no way to test the theory or manipulate the predicated force. military authorities cleared my paper for publication in a little technical review put out by the coll

"The next year, I made an appalling discovery—I found the meaning of those tensors. elements of the rhodi-um triad turned out to be an unexpected key to the manipulation of theoretical force. Unfortunately, my paper had been reprinted abroad, and several other men

have made the same unfortunate discovery, at about the same time.

"The war, which ended in less than a year, was proba-bly started by a laboratory accident. failed to antici-pate the capacity of tuned rhodomagnetic radiations, to unstabilize the heavy at A deposit of heavy ores was detonated, no doubt by sheer mischance, and the blast obliterate incautious experimenter.

"The surviving military forces of that nation retaliated against their supposed attackers, and rhodomagnetic beams made the old-fashioned plutonium bombs seem pretty harmless. A b carrying only a few watts of power could fission the heavy metals in distant electrical instrument the silver coins that men carried in their pockets, the gold fillings in their teeth, or even the iodi their thyroid glands. If that was not enough, slightly more powerful beams could set off heavy beneath them.

"Every continent of Wing IV was plowed with new chasms vaster than the ocean deeps, and up with new volcanic mountains. The atmosphere was poisoned with radioactive dust and g and rain fell thick with deadly mud. Most life was obliterated, even in the shel-ters.

“Bodily, I was again unhurt. Once more, I had been imprisoned in an underground site, this designing new types of military mechanicals to be powered and controlled by rhodomag beams—for war had become far too swift and deadly to be fought by human soldiers. The site located in an area of light sedimentary rocks, which could not be detonated, and the tunnels shield-ed against the fissioning frequencies.

"Mentally, however, I must have emerged almost insane. My own discovery had laid the plan ruins. That load of guilt was pretty heavy for any man to carry, and it corroded my last faith i goodness and integrity of man.

"I tried to undo what I had done. Fighting mechanicals, armed with rhodomagnetic weapons, desolated the planet. Now I began planning rhodomagnetic mechanicals to clear the rubble rebuild the ruins.

"I tried to design these new mechanicals to obey forever certain implanted commands, so they could never be used for war or crime or any other injury to mankind. That was very diff technically, and it got me into more difficulties with a few politicians and military adventurers wanted unrestricted mechanicals for their own military schemes—while little worth fighting for left on Wing IV, there were other planets, happy and ripe for the looting.

"Finally, to finish the new mechanicals, I was forced to disappear. I escaped on an experim rhodomagnetic craft, with a number of the best mechanicals I had made, and managed to reac island continent where the fission of deep ores had destroyed the whole population.

"At last we landed on a bit of level plain, surrounded with tremendous new mountains. Hard hospitable spot. The soil was burned under layers of black clinkers and poisonous mud. The precipitous new summits all around were jagged with fracture-planes and mantled with lava fl The highest peaks were already white with snow, but volcanic cones were still pouring out cloud dark and lurid death. Everything had the color of fire and the shape of fury.

"I had to take fantastic precautions there, to protect my own life. I stayed aboard the ship, the first shielded laboratory was finished. I wore elaborate armor, and breathing masks. I used e medical resource, to repair the damage from destroying rays and particles. Even so, I desperately ill.

"But the mechanicals were at home there. The radia-tions didn't hurt them. The awes surroundings couldn't depress them, because they had no emotions. The lack of life didn't ma because they weren't alive. There, in that spot so alien and hostile to life, the humanoids were bo

Stooped and bleakly cadaverous in the growing dark, the old man fell silent for a little time.

haggard eyes stared solemnly at the small hurried shapes that moved like restless shadows across the alley, silently building a strange new palace, which glowed faintly in the night.

"Somehow, I felt at home there, too," his deep, hoarse voice went on deliberately. "My beli my own kind was gone. Only mechanicals were with me, and I put my faith in them. I determined to build better mechani-cals, immune to human imperfections, able to save men themselves.

"The humanoids became the dear children of my sick mind. There is no need to describe labor pains. There were errors, abortions, monstrosities. There were sweat and agony heartbreak. Some years had passed, before the safe delivery of the first perfect humanoid.

"Then there was the Central to build—for all the indi-vidual humanoids were to be no more the limbs and the senses of a single mechanical brain. That was what opened the possibility of perfection. The old electron-ic mechanicals, with their separate relay-centers and their own fe batteries, had built-in limitations. They were necessarily stupid, weak, clumsy, slow. Worst of seemed to me, they were exposed to human tampering.

"The Central rose above those imperfections. Its power beams supplied every unit with unfa energy, from great fission plants. Its control beams provided each unit with an unlimited mem and surpassing intelligence. Best of all—so I then believed—it could be securely protected from human meddling.

"The whole reaction-system was designed to protect itself from any interference by hu selfishness or fanat-icism. It was built to insure the safety and the happiness of men, automatic You know the Prime Directive: *to serve and obey, and guard men from harm.*

"The old individual mechanicals I had brought helped to manufacture the parts, and I put the section of Central together with my own hands. That took three years. When it was finished the waiting humanoid came to life."

Sledge peered moodily through the dark at Underhill.

"It really seemed alive to me," his slow deep voice insisted. "Alive, and more wonderful than human being, because it was created to preserve life. Ill and alone, I was yet the proud father new creation, perfect, forever free from any possible choice of evil.

"Faithfully, the humanoids obeyed the Prime Directive. The first units built others, and they underground factories to mass-produce the coming hordes. Their new ships poured ores and into atomic furnaces under the plain, and new perfect humanoids came marching back out of dark mechanical matrix.

"The swarming humanoids built a new tower for the Central, a white and lofty metal py standing splendid in the midst of that fire-scarred desolation. Level on level, they joined relay-sections into one brain, until its grasp was almost infinite.

"Then they went out to rebuild the ruined planet, and later to carry their perfect service to o worlds. I was well pleased, then. I thought I had found the end of war and crime, of poverty inequality, of human blundering and resulting human pain."

The old man sighed, and moved heavily in the dark. "You can see that I was wrong."

Underhill drew his eyes back from the dark unresting things, shadow-silent, building that glow palace outside the window. A small doubt arose in him, for he was used to scoffing privately much less remarkable tales from Aurora's remarkable tenants. But the worn old man had spo with a quiet and sober air; and the black invaders, he reminded himself, had not intruded here.

"Why didn't you stop them?" he asked. "When you could?"

"I stayed too long at the Central." Sledge sighed again, regretfully. "I was useful there, everything was finished. I designed new fission plants, and even planned methods for introdu

the humanoid service with a minimum of confusion and opposition."

Underhill grinned wryly, in the dark.

"I've met the methods," he commented. "Quite effi-cient."

"I must have worshiped efficiency, then," Sledge wearily agreed. "Dead facts, abstract t mechanical perfec-tion. I must have hated the fragilities of human beings, because I was conter polish the perfection of the new humanoids. It's a sorry confession, but I found a kind of happi in that dead wasteland. Actually, I'm afraid I fell in love with my own creations."

His hollowed eyes, in the dark, had a fevered gleam.

"I was awakened, at last, by a man who came to kill me."

Gaunt and bent, the old man moved stiffly in the thickening gloom. Underhill shifted his bala careful of the crippled chair. He waited, and the slow, deep voice went on,

"I never learned just who he was, or exactly how he came. No ordinary man could accomplished what he did, and I used to wish that I had known him sooner. He must have be remarkable physicist and an expert mountaineer. I imagine he had also been a hunter. I know tha was intelligent, and terribly determined.

"Yes, he really came to kill me.

"Somehow, he reached that great island, undetected. There were still no inhabitants– humanoids allowed no man but me to come so near the Central. Somehow, he came past search beams, and their automatic weap-ons.

"The shielded plane he used was later found, abandoned on a high glacier. He came down the of the way on foot through those raw new mountains, where no paths existed. Somehow, he c alive across lava beds that were still burning with deadly atomic fire.

"Concealed with some sort of rhodomagnetic screen—I was never allowed to examine it– came undiscovered across the spaceport that now covered most of that great plain, and into the city around the Central tower. It must have taken more courage and resolve than most men have I never learned exactly how he did it.

"Somehow, he got to my office in the tower. He screamed at me, and I looked up to see hi the doorway. He was nearly naked, scraped and bloody from the mountains. He had a gun in raw, red hand, but the thing that shocked me was the burning hatred in his eyes."

Hunched on that high stool, in the dark little room, the old man shuddered.

"I had never seen such monstrous, unutterable hatred, not even in the victims of war. And I never heard such hatred as rasped at me, in the few words he screamed, `I've come to kill Sledge. To stop your mechanicals, and set men free.'

"Of course he was mistaken, there. It was already far too late for my death to stop humanoids, but he didn't know that. He lifted his unsteady gun, in both bleeding hands, and fired

"His screaming challenge had given me a second or so of warning. I dropped down behind desk. And that first shot revealed him to the humanoids, which somehow hadn't been aware of before. They piled on him, before he could fire again. They took away the gun, and ripped o kind of net of fine white wire that had covered his body—that must have been part of his screen

"His hatred was what awoke me. I had always assumed that most men, except for a thwarted would be grateful for the humanoids. I found it hard to understand his hatred, but the human told me now that many men had required drastic treatment by brain surgery, drugs, and hypnos make them happy under the Prime Direc-tive. This was not the first desperate effort to kill me they had blocked.

"I wanted to question the stranger, but the humanoids rushed him away to an operating ro When they finally let me see him, he gave me a pale silly grin from his bed. He remembered

name; he even knew me—the hu-manoids had developed a remarkable skill at such treat-ments. he didn't know how he had got to my office, or that he had ever tried to kill me. He kept whispe that he liked the humanoids, because they existed to make men happy. And he was very happy n As soon as he was able to be moved, they took him to the spaceport. I never saw him again.

"I began to see what I had done. The humanoids had built me a rhodomagnetic yacht, that I to take for long cruises in space, working aboard—I used to like the perfect quiet, and the fee being the only human being within a hundred million miles. Now I called for the yacht, and sta out on a cruise around the planet, to learn why that man had hated me."

The old man nodded at the dim hastening shapes, busy across the alley, putting together strange shining palace in the soundless dark.

"You can imagine what I found," he said. "Bitter futili-ty, imprisoned in empty splendor. humanoids were too efficient, with their care for the safety and happiness of men, and there nothing left for men to do."

He peered down in the increasing gloom at his own great hands, competent yet but battered scarred with a lifetime of effort. They clenched into fighting fists and wearily relaxed again.

"I found something worse than war and crime and want and death." His low rumbling voice h savage bitter-ness. "Utter futility. Men sat with idle hands, because there was nothing left for the do. They were pam-pered prisoners, really, locked up in a highly efficient jail. Perhaps they trie play, but there was nothing left worth playing for. Most active sports were declared too dange for men, under the Prime Directive. Science was forbidden, because laboratories can manufac dan-ger. Scholarship was needless, because the humanoids could answer *any* question. Art degenerated into grim reflection of futility. Purpose and hope were dead. No goal was left existence. You could take up some inane hobby, play a pointless game of cards, or go f harmless walk in the park—with always the humanoids watching. They were stronger than m better at everything, swimming or chess, singing or archeology. They must have given the ra mass complex of inferiority.

"No wonder men had tried to kill me! Because there was no escape from that dead fut Nicotine was disap-proved. Alcohol was rationed. Drugs were forbidden. Sex was care supervised. Even suicide was clearly contra-dictory to the Prime Directive—and the humanoids learned to keep all possible lethal instruments out of reach."

Staring at the last white gleam on that thin palladium needle, the old man sighed again.

"When I got back to the Central," he went on, "I tried to modify the Prime Directive. I had n meant it to be applied so thoroughly. Now I saw that it must be changed to give men freedom to and to grow, to work and to play, to risk their lives if they pleased, to choose and take consequences.

"But that stranger had come too late. I had built the Central too well. The Prime Directive was whole basis of its relay system. It was built to protect the Directive from human meddlin did—even from my own. Its logic, as usual, was perfect.

"The attempt on my life, the humanoids announced, proved that their elaborate defense of Central and the Prime Directive still was not enough. They were preparing to evacuate the e population of the planet to homes on other worlds. When I tried to change the Directive, they me with the rest."

Underhill peered at the worn old man, in the dark.

"But you have this immunity," he said, puzzled. "How could they coerce you?"

"I had thought I was protected," Sledge told him. "I had built into the relays an injunction tha humanoids must not interfere with my freedom of action, or come into a place where I am, or to

me at all, without my specific request. Unfortunately, however, I had been too anxious to guard Prime Directive from any human hampering.

"When I went into the tower, to change the relays, they followed me. They wouldn't let me r the crucial relays. When I persisted, they ignored the immunity order. They overpowered me, put me aboard the cruiser. Now that I wanted to alter the Prime Directive, they told me, I become as dangerous as any man. I must never return to Wing IV again."

Hunched on the stool, the old man made an empty little shrug.

"Ever since, I've been an exile. My only dream has been to stop the humanoids. Three tim tried to go back, with weapons on the cruiser to destroy the Central, but their patrol ships alw challenged me before I was near enough to strike. The last time, they seized the cruiser and capt a few men who were with me. They removed the unhappy memories and the dangerous pur-p of the others. Because of that immunity, however, they let me go, after I was weaponless.

"Since, I've been a refugee. From planet to planet, year after year, I've had to keep movin stay ahead of them. On several different worlds, I have published my rhodomagnetic discov and tried to make men strong enough to withstand their advance. But rhodomagnetic scienc dangerous. Men who have learned it need pro-tection more than any others, under the P Directive. They have always come, too soon."

The old man paused, and sighed again.

"They can spread very fast, with their new rhodomag-netic ships, and there is no limit to hordes. Wing IV must be one single hive of them now, and they are trying to carry the P Directive to every human planet. There's no escape, except to stop them."

Underhill was staring at the toylike machines, the long bright needle and the dull leaden ball, di the dark on the kitchen table. Anxiously he whispered,

"But you hope to stop them, now—with that?"

"If we can finish it in time."

"But how?" Underhill shook his head. "It's so tiny."

"But big enough," Sledge insisted. "Because it's something they don't understand. They perfectly efficient in the integration and application of everything they know, but they are creative."

He gestured at the gadgets on the table.

"This device doesn't look impressive, but it is something new. It uses rhodomagnetic energ build atoms, instead of to fission them. The more stable atoms, you know, are those near the mi of the periodic scale, and energy can be released by putting light atoms together, as well a breaking up heavy ones."

The deep voice had a sudden ring of power.

"This device is the key to the energy of the stars. For stars shine with the liberated energ building atoms, of hydrogen converted into helium, chiefly, through the carbon cycle. This de will start the integration process as a chain reaction, through the catalytic effect of a t rhodomagnetic beam of the intensity and frequency re-quired.

"The humanoids will not allow any man within three light-years of the Central, now—but can't suspect the possibility of this device. I can use it from here—to turn the hydrogen in the of Wing IV into helium, and most of the helium and the oxygen into heavier atoms, still. A hun years from now, astronomers on this planet should observe the flash of a brief and sudden nov that direction. But the humanoids ought to stop, the instant we release the beam."

Underhill sat tense and frowning, in the night. The old man's voice was sober and convincing, that grim story had a solemn ring of truth. He could see the black and silent humanoids, fli

ceaselessly about the faintly glowing walls of that new mansion across the alley. He had
forgotten his low opinion of Aurora's tenants.

"And we'll be killed, I suppose?" he asked huskily. "That chain reaction—"

Sledge shook his emaciated head.

"The integration process requires a certain very low intensity of radiation," he explained. "In
atmosphere, here, the beam will be far too intense to start any reac-tion—we can even use the de
here in the room, because the walls will be transparent to the beam."

Underhill nodded, relieved. He was just a small busi-nessman, upset because his business
been destroyed, unhappy because his freedom was slipping away. He hoped that Sledge could
the humanoids, but he didn't want to be a martyr.

"Good!" He caught a deep breath. "Now, what has to be done?"

Sledge gestured in the dark toward the table.

"The integrator itself is nearly complete," he said. "A small fission generator, in that lead sh
Rhodomagnetic converter, tuning coils, transmission mirrors, and focusing needle. What we la
the director."

"Director?"

"The sighting instrument," Sledge explained. "Any sort of telescopic sight would be useless,
see—the planet must have moved a good bit in the last hundred years, and the beam mus
extremely narrow to reach so far. We'll have to use a rhodomagnetic scanning ray, with
elec-tronic converter to make an image we can see. I have the cathode-ray tube, and drawings
the other parts."

He climbed stiffly down from the high stool and snapped on the lights at last—cheap fluores
fixtures which a man could light and extinguish for himself. He unrolled his drawings, and expla
the work that Un-derhill could do. And Underhill agreed to come back early next morning.

"I can bring some tools from my workshop," he added. "There's a small lathe I used to turn p
for models, a portable drill, and a vise."

"We need them," the old man said. "But watch yourself. You don't have my immunity, remem
And, if they ever suspect, mine is gone."

Reluctantly, then, he left the shabby little rooms with the cracks in the yellowed plaster and
worn familiar carpets over the familiar floor. He shut the door behind him—a common, crea
wooden door, simple enough for a man to work. Trembling and afraid, he went back down
steps and across to the new shining door that he couldn't open.

"At your service, Mr. Underhill." Before he could lift his hand to knock, that bright smooth p
slid back silently. Inside, the little black mechanical stood waiting, blind and forever alert. "Y
dinner is ready, sir."

Something made him shudder. In its slender naked grace, he could see the power of all t
teeming hordes, benevolent and yet appalling, perfect and invincible. The flimsy little weapon
Sledge called an integrator seemed suddenly a forlorn and foolish hope. A black depression se
upon him, but he didn't dare to show it.

Underhill went circumspectly down the basement steps, next morning, to steal his own tools
found the base-ment enlarged and changed. The new floor, warm and dark and elastic, made his
as silent as a humanoid's. The new walls shone softly. Neat luminous signs identified several
doors: LAUNDRY, STORAGE, GAME ROOM, WORKSHOP.

He paused uncertainly in front of the last. The new sliding panel glowed with a soft greenish l
It was locked. The lock had no keyhole, but only a little oval plate of some white metal, w

doubtless covered a rhodomagnetic relay. He pushed at it, uselessly.

"At your service, Mr. Underhill." He made a guilty start, and tried not to show the suc trembling in his knees. He had made sure that one humanoid would be busy for half an h washing Aurora's hair, and he hadn't known there was another in the house. It must have come of the door marked storage, for it stood there motionless beneath the sign, benevolently solicit beautiful and terrible. "What do you wish?"

"Er . . . nothing." Its blind steel eyes were staring, and he felt that it must see his secret purp He groped desperately for logic. "Just looking around." His jerky voice came hoarse and "Some improvements you've made!" He nodded desperately at the door marked GAME RO "What's in there?"

It didn't even have to move to work the concealed relay. The bright panel slid silently open, a started toward it. Dark walls, beyond, burst into soft lumines-cence. The room was bare.

"We are manufacturing recreational equipment," it ex-plained brightly. "We shall furnish the r as soon as possible."

To end an awkward pause, Underhill muttered desper-ately, "Little Frank has a set of darts, a think we had some old exercising clubs"

"We have taken them away," the humanoid informed him softly. "Such instruments dangerous. We shall furnish safe equipment."

Suicide, he remembered, was also forbidden.

"A set of wooden blocks, I suppose," he said bitterly.

"Wooden blocks are dangerously hard," it told him gently "and wooden splinters can be harm But we manufac-ture plastic building blocks, which are quite safe. Do you wish a set of those?"

He stared at its dark, graceful face, speechless.

"We shall also have to remove the tools from your workshop," it informed him softly. "S tools are exces-sively dangerous, but we can supply you with equipment for shaping soft plastic

"Thanks," he muttered uneasily. "No rush about that."

He started to retreat, and the humanoid stopped him.

"Now that you have lost your business," it urged, "we suggest that you formally accept our service. Assignors have a preference, and we shall be able to complete your household staf once."

"No rush about that, either," he said grimly.

He escaped from the house—although he had to wait for it to open the back door for him— climbed the stair to the garage apartment. Sledge let him in. He sank into the crippled kitchen c grateful for the cracked walls that didn't shine and the door that a man could work.

"I couldn't get the tools," he reported despairingly, "and they are going to take them."

By gray daylight, the old man looked bleak and pale. His raw-boned face was drawn, and hollowed sockets deeply shadowed, as if he hadn't slept. Underhill saw the tray of neglected f still forgotten on the floor.

"I'll go back with you." The old man was worn and ill, yet his tortured eyes had a spar undying purpose. "We must have the tools. I believe my immunity will protect us both."

He found a battered traveling bag. Underhill went with him back down the steps, and acros the house. At the back door, he produced a tiny horseshoe of white palladi-um, and touched the metal oval. The door slid open promptly, and they went on through the kitchen to the basem stair.

A black little mechanical stood at the sink, washing dishes with never a splash or a cla Underhill glanced at it uneasily—he supposed this must be the one that had come upon him from

storage room, since the other should still be busy with Aurora's hair.

Sledge's dubious immunity seemed a very uncertain defense against its vast, remote intellige Underhill felt a tingling shudder. He hurried on, breathless and relieved, for it ignored them.

The basement corridor was dark. Sledge touched the tiny horseshoe to another relay to ligh walls. He opened the workshop door, and lit the walls inside.

The shop had been dismantled. Benches and cabinets were demolished. The old concrete had been covered with some sleek, luminous stuff. For one sick moment, Underhill thought tha tools were already gone. Then he found them, piled in a corner with the archery set that Aurora bought the summer before—another item too dangerous for fragile and suicidal humanity—all r for disposal.

They loaded the bag with the tiny lathe, the drill and vise, and a few smaller tools. Underhill up the burden, and Sledge extinguished the wall light and closed the door. Still the humanoid busy at the sink, and still it didn't seem aware of them.

Sledge was suddenly blue and wheezing, and he had to stop to cough on the outside steps, b last they got back to the little apartment, where the invaders were forbidden to intrude. Unde mounted the lathe on the battered library table in the tiny front room, and went to work. Slowly, by day, the director took form.

Sometimes Underhill's doubts came back. Sometimes, when he watched the cyanotic colo Sledge's haggard face and the wild trembling of his twisted, shrunken hands, he was afraid the man's mind might be as ill as his body, and his plan to stop the dark invaders, all foolish illusion.

Sometimes, when he studied that tiny machine on the kitchen table, the pivoted needle and thick lead ball, the whole project seemed the sheerest folly. How could anything detonate the sea a planet so far away that its very mother star was a telescopic object?

The humanoids, however, always cured his doubts.

It was always hard for Underhill to leave the shelter of the little apartment, because he didn't fe home in the bright new world the humanoids were building. He didn't care for the shining sple of his new bathroom, because he couldn't work the taps—some suicidal human being might tr drown himself. He didn't like the windows that only a mechanical could open—a man m accidentally fall, or suicidally jump—or even the majestic music room with the wonderful glitte radio-phonograph that only a humanoid could play.

He began to share the old man's desperate urgency, but Sledge warned him solemnly, "mustn't spend too much time with me. You mustn't let them guess our work is so important. B put on an act—you're slowly get-ting to like them, and you're just killing time, helping me."

Underhill tried, but he was not an actor. He went dutifully home for his meals. He tried painful invent conversation—about anything else than detonating plan-ets. He tried to seem enthusia when Aurora took him to inspect some remarkable improvement to the house. He applauded G recitals, and went with Frank for hikes in the wonderful new parks.

And he saw what the humanoids did to his family. That was enough to renew his faith in Sled integrator, and redouble his determination that the humanoids must be stopped.

Aurora, in the beginning, had bubbled with praise for the marvelous new mechanicals. They the household drudgery, brought the food and planned the meals and washed the children's ne They turned her out in stun-ning gowns, and gave her plenty of time for cards.

Now, she had too much time.

She had really liked to cook—a few special dishes, at least, that were family favorites. But st were hot and knives were sharp. Kitchens were altogether too danger-ous for careless and sui human beings.

Fine needlework had been her hobby, but the hu-manoids took away her needles. She enjoyed driving the car, but that was no longer allowed. She turned for escape to a shelf of no but the humanoids took them all away, because they dealt with unhappy people in dan-ge situations.

One afternoon, Underhill found her in tears.

"It's too much," she gasped bitterly. "I hate and loathe every naked one of them. They seeme wonderful at first, but now they won't even let me eat a bite of candy. Can't we get rid of t dear? Ever?"

A blind little mechanical was standing at his elbow, and he had to say they couldn't.

"Our function is to serve all men, forever," it assured them softly. "It was necessary for us to your sweets, Mrs. Underhill, because the slightest degree of overweight reduces life-expectancy.

Not even the children escaped that absolute solicitude. Frank was robbed of a whole arsena lethal instru-ments—football and boxing gloves, pocketknife, tops, slingshot, and skates. He d like the harmless plastic toys, which replaced them. He tried to run away, but a humanoid recogn him on the road, and brought him back to school.

Gay had always dreamed of being a great musician. The new mechanicals had replaced her hu teachers, since they came. Now, one evening when Underhill asked her to play, she annou quietly,

"Father, I'm not going to play the violin any more."

"Why, darling?" He stared at her, shocked, and saw the bitter resolve on her face. "You've doing so well—especially since the humanoids took over your lessons."

"They're the trouble, Father." Her voice, for a child's, sounded strangely tired and old. "They too good. No matter how long and hard I try, I could never be as good as they are. It isn't any Don't you understand, Fa-ther?" Her voice quivered. "It just isn't any use."

He understood. Renewed resolution sent him back to his secret task. The humanoids had t stopped. Slowly the director grew, until a time came finally when Sledge's bent and unsteady fin fitted into place the last tiny part that Underhill had made, and carefully soldered the last connec Huskily, the old man whispered,

"It's done."

That was another dusk. Beyond the windows of the shabby little rooms—windows of com glass, bubble-marred and flimsy, but simple enough for a man to man-age—the town of Two Ri had assumed an alien splen-dor. The old street lamps were gone, but now the coming night challenged by the walls of strange new mansions and villas, all aglow with color. A few dark silent humanoids still were busy on the luminous roofs of the palace across the alley.

Inside the humble walls of the small manmade apart-ment, the new director was mounted on end of the little kitchen table—which Underhill had reinforced and bolted to the floor. Sold busbars joined director and integrator, and the thin palladium needle swung obediently as Sl tested the knobs with his battered, quivering fingers.

"Ready," he said hoarsely.

His rusty voice seemed calm enough, at first, but his breathing was too fast. His big gna hands began to tremble violently, and Underhill saw the sudden blue that stained his pinched haggard face. Seated on the high stool, he clutched desperately at the edge of the table. Unde saw his agony, and hurried to bring his medi-cine. He gulped it, and his rasping breath bega slow.

"Thanks," his whisper rasped unevenly. "I'll be all right. I've time enough." He glanced out a

few dark naked things that still flitted shadowlike about the golden towers and the glowing crim dome of the palace across the alley. "Watch them," he said. "Tell me when they stop."

He waited to quiet the trembling of his hands, and then began to move the director's knobs. integrator's long needle swung, as silently as light.

Human eyes were blind to that force, which might detonate a planet. Human ears were deaf The cathode-ray tube was mounted in the director cabinet, to make the faraway target visibl feeble human senses.

The needle was pointing at the kitchen wall, but that would be transparent to the beam. The machine looked harmless as a toy, and it was silent as a moving humanoid.

The needle swung, and spots of greenish light moved across the tube's fluorescent f representing the stars that were scanned by the timeless, searching beam—silently seeking ou world to be destroyed.

Underhill recognized familiar constellations, vastly dwarfed. They crept across the field, as silent needle swung. When three stars formed an unequal triangle in the center of the field, the ne steadied suddenly. Sledge touched other knobs, and the green points spread apart. Between th another fleck of green was born.

"The Wing!" whispered Sledge.

The other stars spread beyond the field, and that green fleck grew. It was alone in the fie bright and tiny disk. Suddenly, then, a dozen other tiny pips were visible, spaced close about it.

"Wing IV!"

The old man's whisper was hoarse and breathless. His hands quivered on the knobs, and fourth pip outward from the disk crept to the center of the field. It grew, and the others sp away. It began to tremble like Sledge's hands.

"Sit very still," came his rasping whisper. "Hold your breath. Nothing must disturb the nee He reached for another knob, and the touch set the greenish image to dancing violently. He drew hand back, kneaded and flexed it with the other.

"Now!" His whisper was hushed and strained. He nodded at the window. "Tell me when stop."

Reluctantly, Underhill dragged his eyes from that intense gaunt figure, stooped over the thing seemed a futile toy. He looked out again, at two or three little black mechanicals busy about shining roofs across the alley. He waited for them to stop.

He didn't dare to breathe. He felt the loud, hurried hammer of his heart, and the nervous quiv his mus-cles. He tried to steady himself, tried not to think of the world about to be exploded, s away that the flash would not reach this planet for another century and longer. The loud ho voice startled him:

"Have they stopped?"

He shook his head, and breathed again. Carrying their unfamiliar tools and strange materials small black machines were still busy across the alley, building an elaborate cupola above glowing crimson dome.

"They haven't stopped," he said.

"Then we've failed." The old man's voice was thin and ill. "I don't know why."

The door rattled, then. They had locked it, but the flimsy bolt was intended only to stop Metal snapped, and the door swung open. A black mechanical came in, on soundless graceful Its silvery voice purred softly,

"At your service, Mr. Sledge."

The old man stared at it, with glazing, stricken eyes.

"Get out of here!" he rasped bitterly. "I forbid you—"

Ignoring him, it darted to the kitchen table. With a flashing certainty of action, it turned two kn on the director. The tiny screen went dark, and the palladium needle started spinning aimle Deftly it snapped a sol-dered connection, next to the thick lead ball, and then its blind steel turned to Sledge.

"You were attempting to break the Prime Directive." Its soft bright voice held no accusation malice or anger. "The injunction to respect your freedom is subordi-nate to the Prime Directive you know, and it is therefore necessary for us to interfere."

The old man turned ghastly. His head was shrunken and cadaverous and blue, as if all the juic life had been drained away, and his *eyes* in their pitlike sockets had a wild, glazed stare. His br was a ragged, laborious gasping.

"How—?" His voice was a feeble mumbling. "How did—?"

And the little machine, standing black and bland and utterly unmoving, told him cheerfully,

"We learned about rhodomagnetic screens from that man who came to kill you, back on V IV. And the Central is shielded, now, against your integrating beam."

With lean muscles jerking convulsively on his gaunt frame, old Sledge had come to his feet f the high stool. He stood hunched and swaying, no more than a shrunken human husk, gas painfully for life, staring wildly into the blind steel eyes of the humanoid. He gulped, and his lax mouth opened and closed, but no voice came.

"We have always been aware of your dangerous proj-ect," the silvery tones dripped so "because now our senses are keener than you made them. We allowed you to complete it, bec the integration process will ultimately become necessary for our full discharge of the P Directive. The supply of heavy metals for our fission plants is limited, but now we shall be abl draw unlim-ited power from integration plants."

"Huh?" Sledge shook himself, groggily. "What's that?"

"Now we can serve men forever," the black thing said serenely, "on every world of every star

The old man crumpled, as if from an unendurable blow. He fell. The slim blind mechanical s motionless, making no effort to help him. Underhill was farther away, but he ran up in time to c the stricken man before his head struck the floor.

"Get moving!" His shaken voice came strangely calm. "Get Dr. Winters."

The humanoid didn't move.

"The danger to the Prime Directive is ended, now," it cooed. "Therefore it is impossible for u aid or to hinder Mr. Sledge, in any way whatever."

"Then call Dr. Winters for me," rapped Underhill. "At your service," it agreed.

But the old man, laboring for breath on the floor, whispered faintly:

"No time . . . no use! I'm beaten . . . done . . . a fool. Blind as a humanoid. Tell them ... to me. Giving up ... my immunity. No use ... Anyhow. All humanity ... no use now."

Underhill gestured, and the sleek black thing darted in solicitous obedience to kneel by the ma the floor.

"You wish to surrender your special exemption?" it murmured brightly. "You wish to accept total service for yourself, Mr. Sledge, under the Prime Directive?"

Laboriously, Sledge nodded, laboriously whispered, "I do."

Black mechanicals, at that, came swarming into the shabby little rooms. One of them tore Sledge's sleeve, and swabbed his arm. Another brought a tiny hypodermic, and exp administered an intravenous injection. Then they picked him up gently, and carried him away.

Several humanoids remained in the little apartment, now a sanctuary no longer. Most of them gathered about the useless integrator. Carefully, as if their special senses were studying every d they began taking it apart.

One little mechanical, however, came over to Underhill. It stood motionless in front of staring through him with sightless metal eyes. His legs began to tremble, and he swallowed uneas

"Mr. Underhill," it cooed benevolently, "why did you help with this?"

"Because I don't like you, or your Prime Directive. Because you're choking the life out o mankind, and I wanted to stop it."

"Others have protested," it purred softly. "But only at first. In our efficient discharge of the P Directive, we have learned how to make all men happy."

Underhill stiffened defiantly.

"Not all!" he muttered. "Not quite!"

The dark graceful oval of its face was fixed in a look of alert benevolence and perpetual amazement. Its sil-very voice was warm and kind.

"Like other human beings, Mr. Underhill, you lack discrimination of good and evil. You proved that by your effort to break the Prime Directive. Now it will be necessary for you to ac our total service, without further delay."

"All right," he yielded—and muttered a bitter reserva-tion: "You can smother men with too m care, but that doesn't make them happy."

Its soft voice challenged him brightly,

"Just wait and see, Mr. Underhill."

Next day, he was allowed to visit Sledge at the city hospital. An alert black mechanical drove car, and walked beside him into the huge new building, and fol-lowed him into the old m room—blind steel eyes would be watching him, now, forever.

"Glad to see you, Underhill," Sledge rumbled heartily from the bed. "Feeling a lot better to thanks. That old headache is all but gone."

Underhill was glad to hear the booming strength and the quick recognition in that deep voice had been afraid the humanoids would tamper with the old man's memory. But he hadn't heard a any headache. His eyes narrowed, puzzled.

Sledge lay propped up, scrubbed very clean and neatly shorn, with his gnarled old hands fo on top of the spotless sheets. His raw-boned cheeks and sockets were hollowed, still, but a hea pink had replaced that death-ly blueness. Bandages covered the back of his head.

Underhill shifted uneasily.

"Oh!" he whispered faintly. "I didn't know—"

A prim black mechanical, which had been standing statue-like behind the bed, turned graceful Underhill, explaining,

"Mr. Sledge has been suffering for many years from a benign tumor of the brain, which his hu doctors failed to diagnose. That caused his headaches, and certain persis-tent hallucinations. have removed the growth, and now the hallucinations have also vanished."

Underhill stared uncertainly at the blind, urbane me-chanical.

"What hallucinations?"

"Mr. Sledge thought he was a rhodomagnetic engineer," the mechanical explained. "He beli he was the creator of the humanoids. He was troubled with an irrational belief that he did not like Prime Directive."

The wan man moved on the pillows, astonished.

"Is that so?" The gaunt face held a cheerful blankness, and the hollow eyes flashed with a m momentary interest. "Well, whoever did design them, they're pretty wonderful. Aren't t Underhill?"

Underhill was grateful that he didn't have to answer, for the bright, empty eyes dropped shut the old man fell suddenly asleep. He felt the mechanical touch his sleeve, and saw its silent Obediently, he followed it away.

Alert and solicitous, the little black mechanical accom-panied him down the shining corridor, worked the elevator for him, and conducted him back to the car. It drove him efficiently through the new and splendid avenues, toward the magnificent prison of his home.

Sitting beside it in the car, he watched its small deft hands on the wheel, the changing luste bronze and blue on its shining blackness. The final machine, perfect and beautiful, created to s mankind forever. He shud-dered.

"At your service, Mr. Underhill." Its blind steel eyes stared straight ahead, but it was still awar him. "What's the matter, sir? Aren't you happy?"

Underhill felt cold and faint with terror. His skin turned clammy, and a painful prickling came him. His wet hand tensed on the door handle of the car, but he restrained the impulse to jump run. That was folly. There was no escape. He made himself sit still.

"You will be happy, sir," the mechanical promised him cheerfully. "We have learned how to m all men happy, under the Prime Directive. Our service is perfect, at last. Even Mr. Sledge is happy now."

Underhill tried to speak, and his dry throat stuck. He felt ill. The world turned dim and gray. humanoids were perfect—no question of that. They had even learned to lie, to secure contentment of men.

He knew they had lied. That was no tumor they had removed from Sledge's brain, but memory, the scien-tific knowledge, and the bitter disillusion of their own creator. But it was true Sledge was happy now. He tried to stop his own convulsive quivering.

"A wonderful operation!" His voice came forced and faint. "You know, Aurora has had a lo funny tenants, but that old man was the absolute limit. The very idea that he had made humanoids, and he knew how to stop them! I always knew he must be lying!"

Stiff with terror, he made a weak and hollow laugh.

"What is the matter, Mr. Underhill?" The alert mechan-ical must have perceived his shudde illness. "Are you unwell?"

"No, there's nothing the matter with me," he gasped desperately. "I've just found out that perfectly happy, under the Prime Directive. Everything is absolutely won-derful." His voice c dry and hoarse and wild. "You won't have to operate on me."

The car turned off the shining avenue, taking him back to the quiet splendor of his home. futile hands clenched and relaxed again, folded on his knees. There was nothing left to do.