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Editor FREDERIK POHL • Art director RICHARD POWERS

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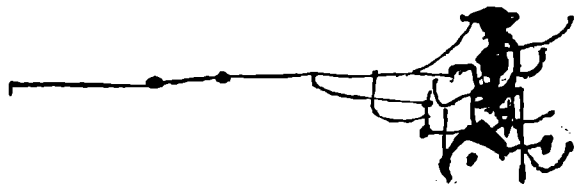
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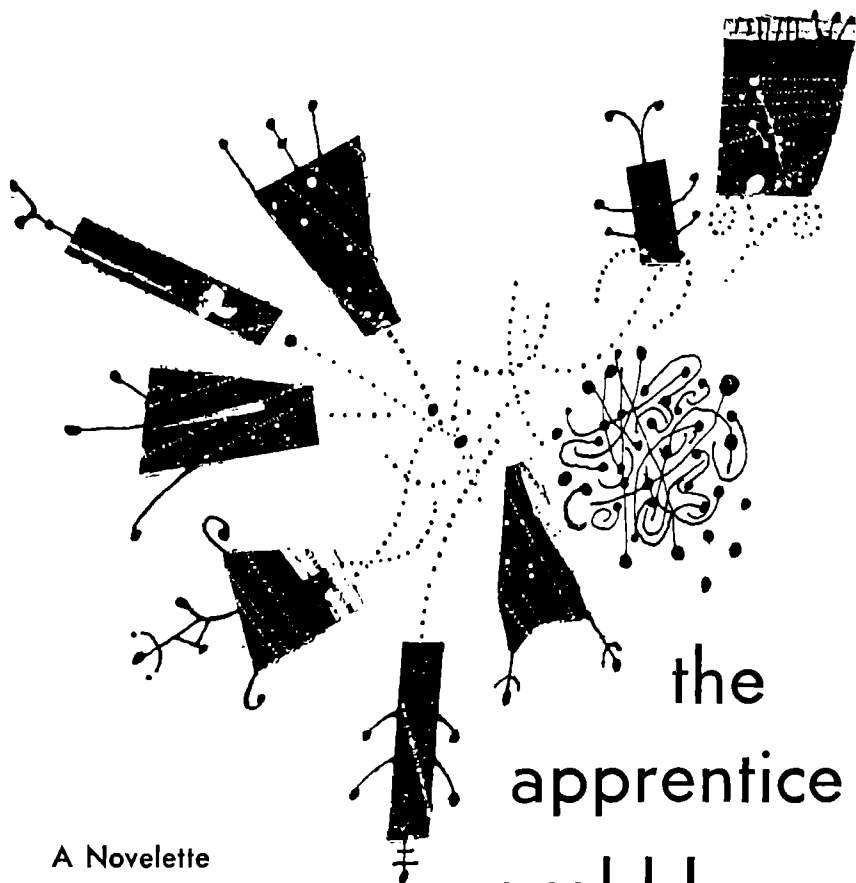
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A Novelette

the apprentice wobbler

POUL ANDERSON

THE moving men were cleaning out an office on the fifteenth story of the building across the street.

As Holloway and Damon watched, a safe came floating

through the window. It bobbed a little in the breeze, clanking lightly against the filing cabinets which were already there. A couple of heavy desks and some assort-

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ed furniture drifted out after the safe.

"That must be about it," said Damon uneasily.

"Yeah." Holloway shook a cigarette from its pack and stuck it in his mouth.

A man jumped from the window. He was in ordinary work clothes, with a Wojcek machine like a suitcase in his hand. He soared to one of the swivel chairs hovering in the sky, sat down, and made himself comfortable with the machine on his lap.

Then the whole convoy got into motion and flew out of sight beyond the skyscrapers.

Damon looked at the crowds below, most of them going casually about their business—Wojcek was getting to be an old story—and swore in a tired voice. "You'd think the cops would at least rope off the area," he said. "Suppose that damn gadget failed? People would get killed."

"Wojcek hasn't failed yet," said Holloway. "They claim they *can't* have accidents."

"They claim! They claim!" Damon spun on his heel and walked over to his desk and sat down behind it. He was a big man, with soft face and hard eyes, correctly outfitted in the green suit and sincere tie currently prescribed for executives. He regarded the

machine before him with a bitter gaze. It was of the same oblong shape as the one he had just seen in use, with a handle, a neat crackle finish, and a bewildering array of meters and dials; but it had come out of his company's own laboratories. Nobody who owned a Wojcek would sell it for any price, and stolen ones disappeared, went back to their owners in some unknown fashion.

"Sit down, Dan," he said. "We've got to run through this again. Maybe then we can get the picture."

DANIEL HOLLOWAY jackknifed his gaunt frame into a chair, remembered that he was supposed to look alert, and used the edge of the seat. His long face did not bend itself easily into an expression of deferential eagerness, but he tried manfully.

"Okay, chief," he said. "Fire when ready."

"You got no results whatsoever out of this thing?" Damon gestured at the machine. Its meters gazed blandly back at him.

"None, chief."

"Are you sure it's a true copy?"

"Well, the patent is on file, you know. We built it exactly

according to specifications." Holloway scowled and ran a hand through his coarse black hair. "I could have told you from the blueprints, though, that we wouldn't learn anything. It's just a lot of tubes, capacitors, and whatnot, powered by a six-volt dry cell battery. The current goes round and round, and it doesn't produce anything except a little heat."

"But damn it, boy, the thing works for the Wojcek crews!" said Damon.

"Uh-huh. And you tell me where a six-volt battery finds the power to lift a safe weighing a couple of tons." Holloway realized that his cigarette was still unlighted, and fumbled after a match. "There were no ropes attached to that furniture, no nothing. . . . I not only can't figure out where the energy comes from, I can't understand how it's applied. I've watched their crews at work, you know, using every instrument I could think of to try and find out. Nothing registered, except the slight local temperature drop reported in all the journals."

The vice president in charge of research and development nailed the engineer with a stiff eye. "I don't get any nourishment out of this,

boy," he said. "Have you read *all* the technical papers?"

"Oh, yes," said Holloway bleakly. "Articles by a dozen different men in twenty different journals. Including Wojcek's own reports. He describes how you can move matter, gives measurements of the selectivity and . . . well, all the data are there. And the physicists are going quietly insane trying to find a theory which accounts for it."

"Still," mused Damon, "it's funny that the only people who can make those blasted things work are those Wojcek has trained himself."

"But that includes men from the Bureau of Standards," pointed out Holloway. "It's no fake. After all, chief, theoretically anyone can do a successful appendectomy from a description in a book, but in practice it usually takes a skilled surgeon. The mere fact that special training is required proves nothing. Neither does the fact that nobody knows the *why* of the Wojcek Effect. It's like, oh, X-rays, which were used for quite a while before anybody really understood what generated them. The point is, Wojcek has proved to the government's satisfaction that his machines are safe in the

hands of a skilled operator. In fact, they're safer than any other gadget, because an unskilled man can't make them work at all."

"I know," said Damon in a moody voice. "Our legal department tried for two years to get injunctions. And now the louse is—— Dan, he'll destroy the economy! His people move furniture, cargo, anything, anywhere, for half price and no breakage. He generates his own atomic energy. Auto stocks are nose-diving, because everybody figures in a few years they'll have Wojcek machines too, and fly around without the trouble and expense of a car. He's talking about crashproof airplanes that don't need fuel! Lucky thing, boy, we've got friends in the CAA and he hasn't gotten a permit yet—but it's coming. Gas, oil, autos, uranium, a hundred essential businesses are ready to go bust."

"I know," said Holloway. The fear of being laid off was haggard in him. He was only an engineer in the corporation's research department, no executive status whatsoever. He had hopes of promotion, but——

"The only thing that's saved us so far is, it takes time to train his operators,"

said Damon. "Only a few thousand of 'em to date. But it'll snowball if we don't stop it."

"I don't see how we can," said Holloway uneasily. He added a hasty: "Chief."

"Oh, we don't want to *stop* it." Damon smiled, exuding sincerity. "After all, boy, our great American free enterprise economy . . . progress . . . rising standard of living. Sure. But you got to see the big picture, Dan. Readjustment. We can't be hasty. We have a responsibility to our shareholders." Holloway waited for him to describe the widows and orphans, but was spared that much. "Let's put it this way, man to man. We want a piece of this."

"Well——"

"If we find out how it works, maybe we can do something about it. This Wojcek character. Radical. Something ought to be done. You know what?" Damon leaned forward confidentially. "We've had him traced back. He's no physicist. He was bounced out of the American Psychological Association ten years ago for making fancy claims he couldn't prove. That's right, he started out as an egghead psych professor."

Holloway sucked in a surprised breath.

"So we need you, Dan," said Damon earnestly. "I've had my eye on you for quite a while. Quite a while. You're a bright boy, up and coming. I want you to go enroll in Wojcek's school. Learn all you can. Mostly, learn what this flimflam is and what really makes the gadget work. But if you can pick up anything else—you know. There might be a nice little promotion waiting for you when you get back. We need a new assistant department head."

Holloway sighed. He had been afraid of this.

II

WOJCEK Enterprises maintained its headquarters and school on a hundred acres of Iowa farmland, more to escape the nuisance of city inspections than for fear of accidents. Holloway was met at the Des Moines airport by a stocky, blond young man who introduced himself as Thomas Gerrold. "Got your luggage? I'll drive you out to the place."

"I thought you, uh, flew," said Holloway.

Gerrold laughed. "Well, I could kite you there, but

most of the recruits would find that a bit disconcerting." He picked up one of the bags and led the way out. "I'm a sort of principal at the school, your official wailing wall, besides doing a lot of the instruction. The old man can't be bothered with it, he's all tied up in research." With a startlingly sharp blue glance: "Do you know why Olson cancelled out?"

"His wife is sick," lied Holloway. As a matter of fact, it had taken a substantial bribe; there was a waiting list of thousands. Olson had recommended Holloway to take his place and, rather to everyone's surprise, the switch had been made at once—probably because Wojcek needed men with technical training and most of them were too set in their jobs to apply. A generation which worshipped before the altars of Conforming Security was apt to be short on pioneers.

"Too bad," said Gerrold. "You know, though, we've already had a good deal of luck with our medical program. Maybe in another few years we'll put the doctors out of business."

"Huh?" Holloway stopped dead.

"Sure. Look, if a Wobbly—that's our pet name for the

Wojcek machine—if it's sensitive enough to shift individual nucleons around and get atomic energy out of plain old water, why can't it kill bacteria selectively? Or remove cancers, or shunt calcium right out of your hardening arteries? We're having trouble—biological systems are so much more complicated than even the atomic nucleus—and we're handicapped by having only one or two biologists who can operate the gizmo. But it looks promising."

They emerged in the parking lot. Gerrold stared coldly at the sardine-packed vehicles. "Take us an hour just to get out of town," he snorted, "and it's getting to be as much as your life is worth to venture on a highway. All that petroleum, metal, irreplaceable natural resources, used up—I look forward to seeing the automobile join the buggy in the museums."

Holloway had sometimes cherished similar thoughts, but it shocked him to hear them spoken in the open air. Maybe Wojcek and his gang really were subversive.

Gerrold had cursed his way through the city and was on US 69, bound north between rolling green fields, before he resumed conversation. "Why

did you enroll, Dan?" he asked.

"I was interested," said Holloway.

"Let's see. You were with——"

Holloway named the corporation truthfully enough. His resignation was on file there too, just in case anyone got nosy. "Electronics engineer," he added. "This new field of yours seemed right in my line."

"Wasn't your outfit working on it too?"

HOLLOWAY hesitated, remembered that the Wobly circuits were no secret and that Gerrold was probably not naive, and nodded. "Of course. But we couldn't get anywhere."

"It takes training. We can't just write an operating manual; we have to develop the skills, grind them right into your brain." Gerrold stared ahead of him and added casually: "Ever wondered why we don't take students affiliated with any organization? We did accept those men from the Bureau of Standards—three graduated out of twenty—but that was only to prove we weren't faking and to get the necessary licenses. Otherwise we insist on our pupils being free of all ties."

"Why? Well . . . you don't want competition, I suppose."

"Nonsense! We're not looking for an anti-trust suit. After you graduate, you're free to go where you want. There are already small Wobbly companies springing up all over the world. In time, we hope to see other schools established, independent ones, though an instructor in the technique needs more training than a simple operator. No, Dan, there are two good reasons."

Holloway waited while Gerrold maneuvered profanely past a truck. "Yes?"

"*Imprimis*: I know Steve Wojcek has been called a radical, but actually he's one of the last believers in private enterprise—which a big corporation, subsidized, government-contracted, protected by tariffs and fair trade laws and sheer bigness from all genuine competition, up to its nose in politics, a royal share of its stock owned by labor unions . . . *ain't*. Consider this damn hunk of machinery I'm driving. You know as well as I do it could be made for half the price and twice as efficient—front-wheel drive, turbine engine, unitized aluminum body, all the knowledge we have right now and aren't using. Not that the

manufacturers are villains; it's only that they've gotten too fat between the ears to do anything but imitate each other. The old man would hate to see that happen to the Wobbly. It's the biggest technological breakthrough since atomic energy, maybe since fire and the wheel, and he doesn't want its development slowed down just to suit people who have a vested interest in wasting our natural resources. Which people include business, labor, and government."

Holloway took out a cigarette and puffed hard. He had never taken much interest in politics; Gerrold sounded radical. "But how about the, uh, transition?" he asked. "You could throw ten million men out of work."

"Why should they work when, strictly speaking, it's waste motion? Let's cut down to a four-hour day for the same wages as now. It'll be possible once this thing is properly developed, and then everybody can have a job plus more time to be human. But the question is not political or economic, Dan, or it shouldn't be. It's a matter of the survival of civilization. We can't go on the way we are, more people and fewer resources every day. If the Wobbly can

save fuel, metal, soil, water, then it's got to be introduced as fast as humanly possible."

Holloway smoked in silence for a while. Then: "What's your second reason?"

"Well, that's a more immediately practical one. Not everybody can learn to operate these dofunnies. We flunk out about 25 percent as it is; the blasted things just won't perform for them. We've found that most of the failures are people with a basic feeling of insecurity. Down underneath, they're afraid of the Wobbly, afraid of the revolution it can bring about. And since it's bound to change the outfit they're tied in with— You see? It's the insecure person who makes a fetish of conformity and puts himself in a nice safe job where someone else can do his worrying for him. You can't embark on a wholly new adventure without self-confidence." Gerrold grinned. "As far as we're concerned, any of our graduates can go work for the big corporations, but so far none of them have done so. They're that kind of people."

Holloway smiled rather harshly. "That may let me out," he said.

"It may," admitted Gerrold. "As a highly trained man,

you're a poor risk for us. For some reason, professional scientists and technicians seldom learn the trick of operating a Wobbly. Our best bet is the intelligent but untrained person. But we'll never understand the effect, never develop all its potentialities, without genuine scientists, so we keep trying. Every so often we succeed. I hope you'll be one of our successes."

HOLLOWAY had read the laboriously compiled dossier on Steven Wojcek, and gone back to the newspaper accounts of his failures. That was a decade ago, just after the Short War and the Red Army revolution which put men who understood war and therefore desired peace into the Kremlin. It had been too close a brush with annihilation; the world went on an emotional jag, and any sensational news unrelated to an episode best forgotten received a big play.

Wojcek had been only semi-respectable at the time. It was felt that a professor of psychology should stick to putting rats through mazes and not dabble in mathematical biophysics. But in view of the shortage of academic personnel, it could be tolerated. Then there had been some trouble—

kind not specified. And he had faded into obscurity, doing routine personnel tests for a small company and tinkering in his spare time. Until two years ago he came up with his new machine and *it* worked.

Holloway had expected a wild-haired figure with thick accent and gleaming eyes. Wojcek was a small man who spoke plain Midwestern English; his grizzled hair was crew cut, his eyes brown and gentle, only his rumpled suit fitted the stereotype. He shook hands in his cluttered office and took beer from a cooler.

"Sit down, Mr. Holloway, sit down," he said. "I'm mighty glad to have you with us. I hope you'll see fit to join me in research when you've graduated, we do need engineers in the worst way. We can't pay so good yet, but I think you'd enjoy it."

"There's the matter of my graduating first," said Holloway.

Wojcek tilted a beer bottle to his lips. "Aaah! Carlsberg, notice; best on this planet. If I weren't a law-abiding citizen, I'd smuggle it in; but then, I hope to see these silly tariffs abolished someday. You know, it takes as much to be a connoisseur of beer as of wine, and it's a lot cheap-

er. . . . Well, I assume you'll pass. Otherwise we've lost our money." The school was free, paid for out of the company's profits; in a business sense, it justified itself by the fact that most graduates so far stayed with the outfit, but Holloway doubted if Wojcek cared much about the financial angle.

"Well, at least I'm interested," said the engineer. "I've read all the technical papers a hundred times, and I still can't figure out how the, uh, Wobbly works."

"Neither can we." Wojcek grinned. "There's a theoretical physicist at Harvard who's developing a pretty good explanation. You'll hear about it in the lectures. Get this straight, though. It is not magic. It's a physical effect, obeying the conservation laws like anything else. We're not getting something for nothing."

Holloway asked bluntly: "How did you find it in the course of . . . psychological research?"

"Pure accident." Wojcek's smile turned wry.

After that they chatted of inconsequentials. Holloway admitted to being married, wife and two kids in New York—suburbanite, not yet promoted to the exurbs. Wojcek said it was a pity the

school didn't have room for families, but they took a two-week Christmas vacation and he could go home then. The average student needed a year to become proficient.

Holloway gnawed an inward tension. He couldn't tell Wojcek, he hadn't even told his wife. She thought he had quit his job to try something new. It was the first time he had had secrets from her, and what annoyed him most was that she had been glad he was quitting.

But you didn't countermand a vice president's suggestions.

III

THE school occupied a dozen long prefabs, dormitories, lecture halls, labs, a mess room. Holloway's quarters were small but private. His fellow students were a mixed lot, some of them from the other side of the planet, but except for a Navy man who had ideas about applying the Wojcek Effect to space rockets, they were nothing unusual. Unless . . . well, you had to admit an abnormal level of curiosity and venture-some daydreaming.

They mingled socially after hours, or went in to Des Moines for amusement. Instruction was individualized,

no more than ten people to a class. Gerrold gave the half-dozen rookies their first lectures.

He had a Wobbly on the table beside him. "You've seen these things in action," he said, "and read about them, but I'll recapitulate. Now watch those big meters on the wall behind me." He twiddled the controls and rose slowly into the air. Needles swung across figures of wattage and amperage. "You see, the energy to move me comes from the building's electrical system, though the machine isn't plugged in. Somehow the Wobbly draws power. Speaking more precisely, it applies the potential difference to the atoms of my body, so the circuit acts as if it had a motor of corresponding power hooked into it." He descended and turned the dials again. "However, for small jobs it doesn't need to use current." A paperweight rose and soared about the hall while the meters remained quiescent. "Note that I could do the same thing by carrying that object around in my hand. Biometric tests have shown that at this setting, the energy is supplied by my own body. I can feel a slight chill in myself. Naturally, under those conditions it can't do any more work than

my metabolism is able to supply."

He returned the paper-weight and leaned across the table. "That's the way we do it. Nothing mysterious, except that we don't know *how* a potential difference at Point A is made to do work at Point B. As you get more skilled, you'll become able to affect individual nucleons. Any atom with positive binding energy can be transmuted, and the mass loss can be made to do work. All the energy, mind you; no radiation hazards. You'll also be able to scan objects thousands of miles away and move them. As a simple example, you'll be able to jiggle electrons in a vacuum tube so they operate a speaker and your voice comes out—without any radio waves in between. The efficiency of such a system is obvious.

"It's clear, too, that airplanes which don't need moving parts are nearly a hundred percent efficient, and we could supply the power by transmuting dirt. Also, the plane would be accident proof. No mechanical failures. As for the human element, each ship would have two operators on the ground, spelling each other, and since those operators could scan matter through any kind of

weather—or, as far as that goes, produce smooth clear air in the vicinity of the plane—there'd be no more collisions. This is only experimental, we don't have a CAA license yet, but it'll suggest to you what can be done. Any questions?"

There were plenty.

HOLLOWAY'S first assignment was to tear down and rebuild a Wobbly—over and over, till he knew its circuits by heart.

Gerrold stopped at his workbench after three days of this. "You're learning fast," he remarked.

Holloway felt a tightness in his throat. It wouldn't do to admit how often he had been through this in the corporation laboratories. "Well, I'm used to such things," he said lamely.

Gerrold sat down on the bench, swinging his legs. "What do you think makes 'em tick?" he asked.

"I'll be damned if I know. Apparently the circuits are just a . . . a controller, some kind of electronic valve. But by all the theories of physics there's nothing they could control."

"We need new theories." Gerrold offered a cigarette. "Later on you'll study this no-

tion they're developing at Harvard. Not many of our students get to it, they don't have the math, but I think you should. Essentially, though, it involves the concept of a kind of, uh, hyperspace, through which forces can be applied orthogonally to all vectors in this universe. In our space it's ten inches or a million miles between Point A and Point B, but if you can shunt energy through hyperspace it's no distance at all. Theoretically, in a system of hyperspatial axes, any point in our universe is contiguous to any other point."

Holloway frowned. "But look, Mr. Gerrold——"

"Plain Tom is good enough for me."

"Okay. Tom. Look, you can't use word magic. 'Energy' is not a single stuff, not a genie out of a lamp. Suppose you disintegrate atoms; somehow, gamma ray quanta and kinetic energy of particles have to be transformed to mechanical work."

"Just so. Well, according to this theory—which, mind you, is still very nebulous—according to it, since hyperspatial forces are at right angles to all axes in this universe, the energy we shunt into hyperspace reappears as a difference of gravitational po-

tential. Suppose I want to lift that wrench . . . like so." Gerrold clicked over the dials on an assembled Wobbly, and the tool rose. "Our measurements show that it accelerates. It falls up, you see, because a warped-space effect has made our 'down' into its 'up.' Now we'll stop it." He turned a switch and the wrench halted and hung where it was, six feet off the ground. "What I'm doing now, if the theory is right, is to maintain a warp such that all other forces are counteracted. Actually, it isn't perfect, the wrench still has a tendency to drift on air currents, but it's close enough." Suddenly he brought the object clashing to the floor. "Here, let's see you pick it up."

Holloway started. "Me? But I——"

"You know the gadget inside out. Your own body cells will furnish the little bit of energy you'll need. Go on."

Holloway shrugged. Let's see, now—the controls were bewilderingly complex. It took a dozen of them to lift that one piece of steel, though a single cut-off switch would let it fall again. Cautiously, he set the dials as instructed and turned the positioning vernier.

The wrench did not stir.

"It takes speed," said Gerrold. "You have to set the knobs one after the other, click, click, click, and have the current exactly right all the time—or nothing happens. Try again."

Holloway set his teeth. A dim purposeless anger was rising in him. He had done this a thousand times before, back in New York, and drawn blank. For the one thousand and second try, then. . . . His fingers danced over the control board.

"Cut," said Gerrold. "I think you have the potential in the J circuit off by a millivolt or so."

"How can you tell?" snapped Holloway. "It isn't calibrated that fine."

"A guy gets the feeling of it. Once more, if you will."

Holloway glowered at the Wobbly. Elsewhere in the lab, his fellow recruits were putting down their tools and staring. It would be a hell of a note to flunk out today, under all their eyes—no, he wouldn't, usually it took several hundred rehearsals to get anywhere, but why pick on him? How the devil did Gerrold know the voltage had to be right? Maybe the frequency was more important. Maybe you succeeded or failed

because of your own built-in metabolism. There were people who couldn't work at filling stations because they just naturally picked up too much static electricity. Gerrold was being too bloody smug about an effect that no one really understood.

All right—*heave!*

The wrench wobbled up an inch or two, turned over, and fell.

"By God, you've got it!" Gerrold pounded his back. Holloway stared with small comprehension. He felt cold. "Go on, try again, quick!"

This time the infernal object did not move. Once more, then. It was worse than adjusting your own hi-fi set. Blasted inanimate objects. . . . click, click, click. . . . they'd get their comeuppance. Damon had not said so, but Holloway could guess what the corporation had in mind. Get one of their own men trained to operate a Wobbly—fake a few accidents—adroit publicity, stirring up the ancient human fear of the unknown—and the government would have to declare the Wojcek Effect unsafe. Licenses would be rescinded, research and development would proceed at the turtle pace which suited the big-money boys—and big-labor

boys, too, everybody big wanted to keep the status quo because maybe a new world would turn out to be bigger than himself . . . click, click, click.

Nobody was more surprised than Holloway when he lifted the wrench to the ceiling. It should have stayed there, pressed against the roof, for it was still in the machine's focus and he didn't touch a dial setting. But as he gaped upward, it fell and came within an inch of braining Gerrold. Wobbles were tricky, beasts.

The instructor didn't seem to mind. Holloway learned that a rookie's first success required him to stand a round of drinks the next time everyone was in Des Moines.

SNOW came whooping over the plains, and Holloway took his turn clearing the driveway. Using a Wobbly beat using a shovel. By that time he was skilled enough to handle ordinary-sized objects with no more conscious effort or concentration than it took to drive a car. He was progressing at twice the average rate. After Christmas he would start the more delicate and exacting operations, including nuclear transmutation. He worried about that—

maybe he'd blow up half a county—till Gerrold told him that an experienced operator would be standing by to damp any reaction that showed signs of running wild.

"But how can you tell?" objected Holloway. "It happens in a matter of microseconds."

"You can, somehow," Gerrold reassured him. "You keep your hand on the tactual indicator dial. When trouble shows up . . . well, there's some kind of reflex. You stop the reaction. A moment later your brain registers a chill in your hand. A moment after that, the meters tell you what might have happened. It's like driving; if you see a car nose out of a blind intersection, you slap on your brakes without losing time in thinking about the matter."

Holloway nodded. He had acquired a great deal of respect for his body in the past months.

He dropped in on Wojcek before leaving for the holiday. The director was in his laboratory, surrounded by haywired pieces of meaningless apparatus. A chart on the wall held an odd set of symbols: Holloway recognized a pentagram and a mandala, and wondered what they were for. Probably the old guy still had this psychic bug—though

why he did, when a new world of authentic science was open to him, was hard to understand. Well, Newton had been a mystic too.

"Good to see you, Dan." Wojcek wrung his hand. "In a few months, maybe, you'll join me here. I need a good assistant, or if my line of work doesn't interest you you can try something else. Anything that appeals to you. And the hell with whether there's money in it or not. We just want to learn."

"What are you working on?" asked Holloway curiously.

"The communications aspect. We can already use the Wobbly to transmit vocal messages, or operate a teletype, but why not brain-to-brain? After all, when you perceive a message, what's really happening is a physical process in your head. Why shouldn't we generate the process directly, without going through the ear or the eye?"

Holloway laughed. "Telepathy yet!"

"That's not a respectable word." Wojcek grinned back. "We'll call it something like encephalic resonance, then we can't be slandered. Have you been studying the Harvard hypothesis about the effect?"

"Yes. Frankly, I don't think much of it. Too many postulates."

"Me, too," said Wojcek. "But if it makes them happy, what the hell?"

As he rode to Des Moines, Holloway felt a curious depression. Not that he didn't want to see his wife and kids—Lord, it seemed like forever!—but there was something about the school.

Maybe just the fact that he didn't have to wear a tie and didn't have to call one solitary living soul "chief."

IV

DAMON knocked the ash from his cigar with great care. "So you really can do it," he murmured.

"Uh-huh." Holloway looked out at the iron-gray winter sky of New York. Mass-production Christmas blinked at him from a hundred store windows. "It took me a while to get the knack, before then I was positively dangerous to have around, but now it's easy. As far as I've gone with it, anyway."

"What does it feel like? I've heard it's supposed to feel odd."

"It does. I can't really describe it. You can't operate a machine at all till you're so

skilled that you don't have to look at the meters . . . consciously, anyhow. You just do what's right without thinking about it. I'll give you a for instance, one of my lessons. I used a Wobbly——"

"A what did you say, boy?"

"Wobbly. That's what we . . . they call it."

"I *knew* they were subversive! Go on, Dan. Give it to me straight from the shoulder."

"Well, the idea was, we had a small winged missile, with no engines, and I was supposed to fly it by remote control, out of visual range. There was a TV camera in its nose, giving me a view. But as long as I watched that screen, I couldn't do a thing. Finally I got mad, cussed it . . . and all of a sudden realized I had it in the air. My eyes went back to the screen, and I lost control. Regained it, though, before there was a crash, and put the missile through its paces. Those included looping it around a set of pylons. The screen showed them to me, but I swear I wasn't watching the screen . . . somehow, I *felt* those pylons, like a blind man feels a hand in front of his face, only more clearly. I had a sense of vector relationships, as if I were part of the missile—— There's no word to describe

the feeling. But I wasn't watching that screen!"

"You must have been, off and on," said Damon doubtfully. "Eyes flickering back and forth."

"Well, I suppose so."

"Take it from me, Dan. The good old subconscious. Just turn it loose. Someday when you sit in on a conference, you'll know what I mean."

Holloway started.

Damon smiled. "Well, I can't say yet, Dan. There'll be a nice big bonus for you in all events and there might, there just might be an executive vacancy when you wind up this little chore."

Holloway wondered why he didn't feel happier about it.

"Tell you what, boy," said Damon chummily. "J. B. is giving a party Saturday night. I won't hide it from you, he's got his eye on you. You and your wife come too. You know the place? Eight o'clock."

"Thanks." Holloway calculated rapidly. He'd have to cancel the neighborhood poker party he'd figured on. Rent a tux . . . damn, but he hated stiff collars! He thought Joan would pass muster; she was only a little Oregon girl and didn't know all the latest, and a wife could make or break a young executive, but he

thought she would get by. Trouble was, he didn't know the current rules. Did eight o'clock mean eight on the nose if you stood at the bottom of the pecking order? He'd have to find out—

Damon watched him narrowly. "You've changed, Dan," he said. "I know you've got a lot to chew over, but don't lose the old enthusiasm. Keep your eye on the big picture. We want men who can fit on the Team."

Holloway mumbled something ending in "chief" and got away. His Buick was waiting at the garage, and he threaded a way between Santa Clauses toward his home. Better get rid of this car; Damon drove the same model. Might start looking at the real estate ads, too . . . right address, very important—

In Iowa they didn't give a damn where you lived.

HOLLOWAY took the bus from Des Moines and got off at the school. A number of his fellow students were with him, but he gave their greetings a short reply. He couldn't understand the sullenness within himself. Maybe it was just leaving Joan. She had tried not to cry, but hadn't quite made it.

Well, in another six months

or so he'd finish this miserable business and return home for good.

He unpacked and spent a lonesome evening reading in a corner of the lounge. Gerrold came up to him and said hello, and though the man's manner was affable enough, Holloway had a sudden impression of hostility.

Probably nothing but his own overworked imagination. Nerves.

But the next day, and the following week, he could not see why his assignments were merely repetitious of what he already knew. And he grew increasingly certain that for some reason, Tom Gerrold had it in for him.

THE payoff came in mid-January.

On a morning of frost and gloom, after a night with small sleep, Holloway lost his temper. He had been told to fly around that day, practicing the techniques of soaring and of maintaining an envelope of warm air next to his skin. It must be man's oldest dream, this flying, born with the first half-ape who watched a bird and knew wistfulness, still alive in the present day when you outpaced the birds but were locked in metal. Ordinarily its realiza-

tion soothed and exalted him. But not today.

He hovered above the clouds, seeing their gray turned to a blinding blue-shadowed white, alone with sky and silence. But it was not for him, not now. He was no angel, he was a man with a man's work to do, and Gerrold was keeping him in kindergarten.

Holloway blasphemed and twirled the controls of his Wobbly. Down through the clouds, a moment of whirling mist and then the plains barren with snow, the school buildings rushing to meet him—in through the window!

Wojcek started, almost dropping a piece of blown glass. "Hey, there!" For the first time, Holloway saw him annoyed. "What the hell's going on? I'm busy."

"And I'm not. That's exactly the trouble." Holloway set the Wobbly down and went stiff-legged across the floor.

"Oh . . . it's you, Dan. You look like the wrath to come. What's the matter?"

"I came here to learn. Nobody's teaching me."

"I'd say you've learned quite a bit," answered Wojcek dryly.

"Sure, sure. But there's more. A hell of a lot more. And ever since I got back, all

I've been allowed to do is go over and over what I already know. What's the big idea?"

Wojcek scratched his head. "Don't ask me," he said defensively. "Maybe Tom feels you're not quite ready to start something new. He's in charge of instruction, you know. Not my department at all."

"I don't have anything against practice," said Holloway. "But this stupid business is something else again. It's like making me say the multiplication table every day. I'll take any test you want to give me—but damn and blast it, there's no point in my staying here under these conditions!"

Wojcek looked puzzled and worried. "Frankly, Dan, I believe you—and I don't understand it either. Why not talk to Tom? If there's some argument—well——" He seemed almost frightened, a little man dismayed at the idea of being kicked from his orderly world of inanimate energies into the riotous plane where humankind lived. Hell of a judge he'd make, thought Holloway.

"All right," he mumbled. "I'll see him. Sorry to have bothered you."

He picked up his Wobbly and went out. Gerrold was

standing in the muddy snow just beyond the door.

"I——" began Holloway.

"I know. You don't like the way you're being treated." Gerrold's lip lifted. There was no mistaking the hatred in his eyes. "I was wondering how long it'd take you to get up the nerve."

He turned on his heel. "This way. We'll find a private spot."

Holloway followed in bewilderment. The Wobbly dragged at his arm. They went behind a dormitory, no one in sight, ten miles of open white plain on the other side. Gerrold stopped.

"I was just marking time," he said. "Trying to decide what to do with you. I'm still not sure—except that you're certainly not going to be taught anything more!"

"What are you talking about?" The quiet, persistent cold seemed to gnaw under Holloway's jacket.

"What do you think?" Gerrold jammed his fists into his pockets as if afraid of what they might do. "You've already got too much knowledge to take back to that filthy outfit you're spying for."

Holloway felt as if he had been hit in the stomach. "Look here——" he stuttered.

"I have looked." Gerrold

laughed with scant mirth. "There were a lot of things about you that didn't add up. And of course I never expected the other side to take this lying down. You aren't the first spy they've sent here. But all the others flunked out. You didn't, worse luck! I scanned your movements when you went back to New York. I looked into your friend Damon's mind. The whole scheme is there, the faked experiments and faked accidents to come. Don't bother denying it."

FOR a moment, the only thing that registered was one chance phrase. *I looked into your friend Damon's mind.* It smashed a universe.

Gerrold shook his head. "No. I can't read yours. You're a high-potential psion-icist . . . something in your genes, we don't know yet what it is, but you've got a powerful talent. And your psychological blocs weren't strong enough to nullify it, as they do for so many people."

His eyes would not let go of Holloway's. He spoke tonelessly. "Yes, the inherent ability varies. But we believe every human has it to some degree. A new mutation, perhaps, the next step upward . . . that's the real purpose of

this group, to give everybody the power. And you'd hold up the program for the next hundred years, if you can. And by that time civilization may very easily have broken under its own weight, there won't be any analytical techniques to force the development of psi, man may have to wait half a million years for natural evolution to bring it out. And perhaps he won't be given that much time."

"But then——" Holloway lifted his hands, as if to fend off a blow. "But look here—why——"

"The old man has had enough troubles," said Gerrold. "Can you comprehend the idea of a decent human being? That's what Steve Wojcek is. It nearly broke him, ten years ago, when he was called a liar to his face. I don't want him to know that his most promising student actually is a liar and a thief. That's why I've been stalling, trying to think of some way out of this mess. And now you've brought it to a head, and I'm just as glad!"

Holloway straightened himself. "All right," he said woodenly. "I'll go."

"It's not that easy, mister," replied Gerrold. "You already have enough technique to do your boss' work for him. I've

never killed a man before, but——"

Holloway snatched up the Wobbly. "Take it easy!" he gasped.

Gerrold chuckled. "Go ahead. Fly away if you can."

V

HIS heart was thunder and fury, sweat was cold in the cold windless air, the thing which was Tom Gerrold had too much mystery to be faced. Holloway spun the dials. He lifted a yard, and something like a troll's invisible hand closed on him and pressed him back to earth.

"You see," said Gerrold mildly, "the Wobbly is a fake. Hold still!" Holloway tried to run, and found he could not, it was like being caught in a mesh of rubber.

"Don't get scared," said Gerrold scornfully. "I'm not going to murder you after all. Too many inhibitions, I suppose."

Reaction set in. The nervous system can stand only so many shocks, then it protects itself by apathy . . . or by responding to some wholly different stimulus. Odd, thought Holloway, all at once his only emotion was an overwhelming curiosity.

"The Wobbly is a fake," he repeated.

"Sure. Ever hear about Maelzel's chess-playing machine? Turned out that there was a man inside it. Same thing." Gerrold smiled, almost amiably. "That was Steve Wojcek's stroke of genius."

He leaned against the wall and spoke in a casual, drawling voice. "You see, as far as we've been able to discover, psi works much as the Wobbly is supposed to, by tapping energies and applying them. Except that it's not a machine, but a nervous system, which is the agent. Don't ask me how; that's one thing we're still trying to understand.

"But being essentially a psychological phenomenon, psi follows psychological laws. And one of those laws is this: if you really, sincerely believe you can't do something, if you've hypnotized yourself into believing you're unable—then you can't. Consider hysterical paralysis, or any psychosomatic disorder."

"I begin to see——" whispered Holloway.

"I thought you would," nodded Gerrold. "Now ten years ago, Wojcek was pretty well convinced that such phenomena do exist. And they do, you know. Therefore

his experiments worked—for him. But the scientists who tested his claims . . . well, they probably were open-minded enough, tried to be fair, but subconsciously they had too strong a conditioning. Psi had too bad a name, smacked too much of charlatanism. If true, it would be too hard to fit into their concept of natural law. And a nice, tidy universe with all the loose ends put up in pretty bows is necessary to the emotional security of some people.

"So the experiments did not work for them. Nor would they work for Steve in the presence of the others; so much negation was bound to swamp his own psi output. So he was bounced out on his can.

"But now, when he makes no claims about psionic effects, when he merely shows a machine which is alleged to work on some new *physical* principle, nobody gets rattled. We're used to new discoveries in physics.

"The Wobbly is not an absolute fake. It's a useful teaching tool. It helps you focus your mind, instills the conviction you must have to use your psionic ability. And it helps to get emotionally upset the first few times you use that talent—see all the accounts of poltergeist phe-

nomena. So the Wobbly's controls are designed to be infuriating. Therefore, if your subconscious hasn't been too bridled and blinkered, if you aren't too afraid of newness, your own powers are released.

"We'll reveal the fraud later, when the Wojcek Effect has been accepted. When it's so commonplace that an explanation in terms of psychics rather than of physics won't shock anyone, will in fact merely bore the average man. But right now we can't."

THERE followed a stillness. Winter crackled in the air. Holloway found himself thinking of coal. Every year, millions of tons were burned just to heat houses, coal which ought to be used as a starting point for organic syntheses. With psionic powers, you wouldn't need a furnace, you could draw sunlight from the Sahara region and—

And he was still Gerrold's prisoner.

"Why are you telling me this?"

"An experiment." Gerrold spread his hands. "Go on, I'm not holding you. Fly away—if you can!"

Holloway looked at the Wobbly. Fake, fake, fake, a

useless clutter of tubes and wires; an hour ago he had been sitting on empty air with nothing between him and the ground but the power of his own mind. Suppose he had made a slip?

"I thought so." Gerrold's smile broadened, still without humor. "Go on home. Tell 'em what I've told you, if you like. Nobody will believe it."

He turned and walked out of sight, around the building.

Holloway stood for a while, shaking.

No, wait . . . what was he afraid of?

If he'd been able to fly, or move matter, or scan objects a thousand miles removed—if he could do that once, burdened with a crutch, why not now, when he knew the crutch was not needed?

How *do* you fly?

He stood with teeth jammed together, hands slippery from sweat, and willed himself into the air. There was not a sound, not a stirring, the earth gripped him and would not let go.

Remembering himself alone under the sun was like a knife.

Goddam Tom Gerrold!

When the mist of rage cleared from his eyes, he realized that he was a good fifty feet above ground.

For a moment fear was terrible within him, and he turned end over end and fell toward extinction. Then, somehow, from somewhere, the knowledge came back and he was moving alone. He did not *will* himself above the clouds, any more than he would will himself to walk up a flight of stairs. He simply decided to rise, and his body rose. When a feeling of chill warned him that he was draining his own metabolism too fast, his senses ranged out, found a power line, and drew the energy to lift him further.

Then he dove, shouting like a boy.

Gerrold was in Wojcek's lab, doubtless handing the old man some story to explain his star pupil's quitting. His face was comical when Holloway came in the window.

"My God!" he said in a strangled voice. "You can!"

"Sure." Holloway leaned against the workbench, utterly at ease. "Can't keep a good man down."

"But——"

"Don't worry, Tom. I've changed my mind." Holloway looked at the pentagram and the mandala on the wall.

"Steve, let's face it. I came here as a spy and saboteur for my company. The plan was to end your operations. But it's too big, there's too much to do. I'd like to move my family out here . . . go on studying . . . join you, if I may——"

Gerrold gaped, but Wojcek nodded. "I was wondering when this would happen," he replied.

"*What?*" Holloway and Gerrold said it together.

Wojcek grinned at them. "Look, boys, I'm not quite the unworldly old geezer you think. I knew very well that sooner or later a high-potential psionicist would get in here on behalf of our enemies. I spotted you the minute I saw you, Dan. But what the hell? You couldn't pass this course unless you were pretty free from basic insecurity, unless you had a real desire to know. And that's precisely the type of man we need here, and the type who won't be able to stay away. I only hope your ex-boss sends us some more." He started toward his office.

"Come on, let's crack a few bottles of beer. There are some things psi will never replace—and Carlsberg is one of them!"