

# *Astounding* SCIENCE FICTION

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## CONTENTS

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### NOVELETTES

- WITH FOLDED HANDS, *by Jack Williamson* . . . 6  
LOGIC, *by Poul Anderson* . . . 51

### SHORT STORY

- THE FIGURE, *by Edward Greendon* . . . 46

### ARTICLES

- OBEY THAT IMPULSE! *by George O. Smith* . . . 84  
THE STORY OF MODULATION, *by C. Rudmore* 86

### SERIAL

- FURY, *by Lawrence O'Donnell* . . . 100  
*Conclusion*

### READERS' DEPARTMENTS

- THE EDITOR'S PAGE . . . 4  
IN TIMES TO COME . . . 45  
THE ANALYTICAL LABORATORY . . . 76  
BRASS TACKS . . . 77

### COVER BY TIMMINS

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AST-17



# LOGIC

## BY POUL ANDERSON

*Man can think, but there is no evidence whatever that man's way of thinking is the way to think!*

Illustrated by Timmins

*Brother bringeth  
brother his bane,  
and sons of sisters  
break kinship's bonds  
Never a man  
spareth another.  
Hard is the world.  
Whoredom prevaieth.  
Axe-time, sword-time.*

*—shields are cloven—  
wind-time and wolf-time,  
ere the world waneth.*

—Elder Edda

He was nearly always alone, and even when others were near him, even when he was speaking with them, he seemed to be standing on

the far side of an unbridgeable gulf. His only companion was a gaunt gray mongrel with a curiously shaped head and a savage disposition, and the two had traveled far over the empty countryside, the rolling plains and straggling woods and high bluffs several miles down the river. They were an uncanny sight, walking along a ridge against the blood-flaring sunset, the thin, ragged, big-headed boy, like a dwarf from the legends of an irretrievable past, and the shaggy, lumpish animal skulking at his heels.

Roderick Wayne saw them thus as he walked home along the river. They were trotting rapidly along the other side. He hailed them, and they stopped, and the boy stared curiously, almost wonderingly. Wayne knew that attitude, though Alaric was only a grotesque outline against the fantastically red sky. He knew that his son was looking and looking at him, as if trying to focus, as if trying to remember who the—stranger—was. And the old pain lay deep in him, though he called out loudly enough: "Come on over, Al!"

Wayne had had a hard day's work in the shop, and he was tired. Fixing machinery was a long jump down from teaching mathematics in Southvale College, but the whole world had fallen and men survived as best they could in its ruins. He was better off than most—couldn't complain.

Of old he had been wont to stroll along the river that traversed the campus, each evening after classes, smoking his pipe and swinging his

cane, thinking perhaps of what Karen would have for supper or of the stark impersonal beauty of the latest development in quantum mechanics—two topics not as unrelated as one might suppose. The quiet summer evenings were not to be spent in worry or petty plans for the next day, there was always too much time for that. He simply walked along in his loose-jointed way, breathing tobacco smoke and the cool still air, watching the tall old trees mirror themselves in the river or the molten gold and copper of sunset. There would be a few students on the broad smooth lawns, who would hail him in a friendly way, for Buggy Wayne was well liked; otherwise only the river and himself and the evening star.

But that was sixteen or more years ago, and his memories of that time were dim by now, blurred in a tidal wave of savage, resistless events. The brief, the incredible nightmare of a war that wiped out every important city in the world in a couple of months—its protracted aftermath of disease, starvation, battle, work, woe, and the twisting of human destiny—it covered those earlier experiences, distorted them like rocks seen through a flowing stream. Now the campus stood in ruinous desolation, cattle staked out in the long grass, crumbling empty buildings staring with blind eyes at the shards of civilization.

After the cities went, and the deliberately spread diseases and blights shattered the world's culture into fratricidal savages fighting for the

scraps, there was no more need of professors but a desperate shortage of mechanics and technicians. Southvale, by-passed by war, a college town in the agricultural Midwest, drew into itself a tight communistic dictatorship defending what it had with blood and death. It was cruel, that no-admission policy. There had been open battles with wandering starvelings. But the plagues were kept out, and they had saved enough food for most of them to survive even that first terrible winter after the war-strewn blights and insects had devoured the crops. But farm machinery had to be kept going. It had to be converted to horse, ox, and human power when gasoline gave out. So Wayne was assigned to the machine shop and, somewhat to his own surprise, turned out to be an excellent technician. His talents for robbing now useless tractors and automobiles in search of spare parts for the literally priceless food machines got his nickname changed to Cannibal, and he rose to general superintendent.

That was a long time ago, and conditions had improved since. The dictatorship was relaxed now, but Southvale still didn't need professors, and it had enough elementary teachers for its waning child population. So Wayne was still machine shop boss. In spite of which, he was only a very tired man in patched and greasy overalls, going home to supper, and his thoughts darkened as he saw his child.

Alaric Wayne crossed the ruinous bridge a few yards upriver and

joined his father. They were an odd contrast, the man tall and stooped with grayed hair and a long, lined face; the boy small for his fourteen years, lean and ragged, his frail-looking body too short for his long legs, his head too big for both. Under ruffled brown hair his face was thin, almost intense in its straight-lined, delicately cut pensiveness, but his huge light-blue eyes were vacant and unfocused.

"Where've you been all day, son?" asked Wayne. He didn't really expect an answer, and got none. Alaric rarely spoke, didn't even seem to hear most questions. He was looking blankly ahead now, like a blind creature, but for all his gawky appearance moved with a certain grace.

Wayne's glance held only pity, his mind only an infinite weariness. *And this is the future. The war, loading air and earth with radioactive colloids, dust, which won't burn out for a century. Not enough radioactivity to be lethal to any but highly susceptible individuals—but enough to saturate our organisms and environment, enough to start an explosion of mutations in every living creature. This was man's decision, to sell his birthright, his racial existence, for the sovereign prerogatives of nations existing today only in name and memory. And what will come of it, nobody can know.*

They walked up a hill and onto the street. Grass had grown between paving blocks, and tumble-down houses stood vacantly in weed-covered lots. A little farther on, though, they came into the district

still inhabited. The population had fallen to about half the prewar, through privation and battle as well as causes which had once been more usual. At first glance, Southvale had a human, almost medieval look. A horsedrawn wagon creaked by. Folk went down toward the market place in rude homespun clothes, carrying torches and clumsy lanterns. Candlelight shone warmly through the windows of tenanted houses.

Then one saw the dogs and horses and cattle more closely—and the children. And knew what an irrevocable step had been taken, knew that man would, in a racial sense, no longer be human.

A small pack of grimy urchins raced by, normal by the old standards, normal too in their shouting spite: "Mutie! Mutie! Yaaah, mutant!" Alarc did not seem to notice them, but his dog bristled and growled. In the dusk the animal's high round head, hardly canine, seemed demonic, and his eyes gleamed red.

Then another band of children went by, as dirty and tattered as the first, but—not human. Mutant. No two alike. A muzzled beast face. An extra finger or more, or a deficiency. Feet like toeless, horny-skinned hoofs. Twisted skeletons, grotesque limping gait. Pattering dwarfs. Acromegalic giants, seven feet tall at twelve years of age. A bearded six-year-old. Things even worse—

Not all were obviously deformed. Most mutations were, of course, unfavorable, but none in that group

were cripplingly handicapped. Several looked entirely normal, and their internal differences had been discovered more or less accidentally. Probably many of the "human" children had some such variation, unsuspected, or a latent mutation that would show up later. Nor were all the deviations deformities. Extremely long legs or an abnormally high metabolism, for instance, had advantages as well as disadvantages.

Those were the two kinds of children in Southvale and, by report, the world. A third pitiful group hardly counted, that of hopelessly crippled mutants, born with some handicap of mind or body which usually killed them in a few years.

At first, the tide of abnormal births following the war had brought only horror and despair. Infanticide had run rampant, but today, there were asylums for unwanted children. People knew their child had about three chances in four of being mutant to a greater or less degree—but, after all, there *could* be a human, if not this time then next—or even a genuinely favorable mutation.

But Wayne had not seen or heard of any such, and doubted that he ever would. There were so many ways of not doing something, and even an unquestionably good characteristic seemed to involve some loss elsewhere. Like the Martin kid, with his eagle-keen eyes and total deafness.

He waved to that boy, running along with the mutant band, and got an answer. The rest ignored him.

Mutants were shy of humans, often resentful and suspicious. And one could hardly blame them. This first generation had been hounded unmercifully by the normal children as it grew up, and had had to endure a lot of abuse and discrimination on the part of adults. No wonder they drew together, and said little to anyone except their fellows. Today, with most of their persecutors grown up, the mutants were a majority among the children, but they still had nothing to do with humans of their generation beyond a few fights. The older ones generally realized that *they* would inherit the earth, and were content to wait. Old age and death were their allies.

But Alaric—The old uncertain pain stirred in Wayne. He didn't know. Certainly the boy was mutant; an Xray, taken when the town machine had recently been put back into service, had shown his internal organs to be reversed in position. And apparently the mutation involved moronic traits, for he spoke so little and so poorly, had flunked out of elementary school, and seemed wholly remote from the world outside him. But—well, the kid read omnivorously, and at tremendous speed if he wasn't just idly turning pages. He tinkered with apparatus Wayne had salvaged from the abandoned college labs, though there seemed to be no particular purpose to his actions. And every now and then he made some remark which might be queerly significant—unless, of course, that was only his parents' wishful thinking.

Well, Alaric was all they had now.

Little Ike, born before the war, had died of hunger the first winter. Since Al's birth they'd had no more children. The radioactivity seemed to have a slow sterilizing effect on many people.

Karen met them at the door. The mere sight of her blond vivacity lifted Wayne's spirits. "Hello, gentlemen," she said. "Guess what?"

"I wouldn't know," answered Wayne.

"Government jet was here today. We're going to get regular air service."

"No kidding!"

"Honest Injun, I have it straight from the pilot, a colonel no less. I was down by the port, on the way to market, about noon, when it landed, and of course forced my way into the conversation."

"You wouldn't have to," said Wayne admiringly.

"Flatterer! Anyway, he was informing the mayor officially, and a few passers-by like myself threw in their two bits' worth."

"Hm-m-m." Wayne entered the house. "Of course, I knew the government was starting an airline, but I never thought we'd get a place on it even if we do have a cleared area euphemistically termed an airport."

"Anyway, think of it. We'll get clothes, fuel, machinery, food—no. I suppose we'll be shipping that ourselves. Apropos which, soup's on."

It was a good meal, plain ingredients but imaginative preparation. Wayne attacked it vigorously, but his mind was restless. "Funny," he mused, "how our culture over-

reached itself. It grew top-heavy and collapsed in a war so great we had to start almost over again. But we had some machines and enough knowledge to rebuild without too many intervening steps. Our railroads and highways, for instance, are gone, but now we're replacing them with a national airline. We'll likewise go later directly from foot and horseback to private planes."

"And we won't be isolated any more, contacting the outside maybe four times a year. We'll be part of the world again."

"Mm-m-m—what's left of it, and that isn't much. Europe and most of Asia, they tell me, are too far gone to make intercourse worthwhile or even possible. The southern parts of this country and the greater part of Latin America are still pretty savage. Most people who survived the war migrated there later, to escape cold and hunger. Result—overcrowding, more famine, fighting and general lawlessness. Those who stuck it out here in the north and stayed alive came out better in the end."

"It'll be a curious new culture," said Karen thoughtfully. "Scattered towns and villages, connected by airlines so fast that cities probably won't need to grow up again. Stretches of wild country between, and—well, it'll be strange."

"Certainly that. But we can hardly extrapolate at this stage of the game. Look, we here in Southvale, and a lot of similarly circumstanced places, have been able to relax for some ten years now. Blights and bugs and plagues pretty well

licked, outlaws rounded up or gone into remote areas—Well, we've been back on our feet that long. Since then, the process of re-integrating the country has gone ahead pretty steadily. We're no longer isolated, as you said. With the government center in Oregon as a sort of central exchange, we've been able to trade some of the things we have for what we need, and now this regular airline service will be the way to a national economy. Martial law was . . . ah . . . undeclared nine years ago, and the formal unification of the United States, Canada, and Alaska carried out then. You and I helped elect Drummond to President last time, when the poll plane came around."

"I know a little of that already, O omniscient one. What is all this leading up to?"

"Simply that in spite of all which has been accomplished, there's still a long ways to go. South of us is anarchic barbarism. We have precarious contact with some towns in Latin America, Russia, China, Australia, and South Africa, otherwise we're an island of, shall I say, civilization in a planetary sea of savagery and desolation. What will come of that? Or still more important—what will come of the mutants?"

Karen's eyes were haggard as they searched Alaric's unheeding face. "Perhaps at last—the superman," she whispered.

"Not at all probable, dear. You read the official book explaining this thing. Since most mutations are recessive, though they do tend to follow certain patterns, there must

have been an incredible totality of altered genes for so many to find their mates and show up in the first generation. Even after the radioactivity is gone, there'll be all those unmatched genes, waiting for a complement to become manifest. For several centuries, there'll be no way to tell what sort of children any couple will have, unless the geneticists figure out some system we don't even suspect at present. Even then, the mutated genes would still be there; we couldn't do anything about that. God only knows what the end result will be—but it won't be human."

"There may be other senses of that word."

"There will be, inevitably. But they won't be today's."

"Still—if all the favorable characteristics showed up in one individual, he'd be a superman."

"You assume no unfavorable ones, possibly linked, will appear. And the odds against it are unguessable. Anyway, what is a superman? Is he a bulletproof organism of a thousand horsepower? Is he a macrocephalic dwarf talking in calculus? I suppose you mean a godlike being, a greatly refined and improved human. I grant you, a few minor changes in human physique would be desirable though not at all necessary. But any semanticist will tell you *Homo sapiens* are a million miles from realizing his full mental capacities. He needs training right now, not evolution.

"In any case," finished Wayne grayly, "we're arguing a dead issue.

*Homo sapiens* have committed race suicide. The mutants will be man."

"Yes—I suppose so. What do you think of the steak?"

Wayne settled down in his easy-chair after supper. Tobacco and newspapers were not being produced, and the government was still taking all the radios made in its new or revived factories. But he had a vast library, his own books and those he had salvaged from the college, and most of them were timeless. He opened a well-thumbed little volume and glanced at lines he knew by heart.

"For a' that an a' that,

It's comin' yet for a' that.

When men to men, the whole world o'er,

Shall brothers be for a' that."

*I wonder. How often I've wondered! And even if Burns was right, will the plowman's common sense apply to nonhumanness? Let's see what another has to say—*

"And we, that now make merry in the Room

They left, and Summer dresses in new bloom,

Ourselves must we beneath the Couch of Earth

Descend—ourselves to make a Couch—for whom?"

His gaze descended to Alaric. The boy sprawled on the floor in a litter of open books. His eyes darted from one to another, skipping crazily, their blankness become a weird blue flicker. The books—"Theory of Functions," "Nuclear Mechanics," "Handbook of Chemistry and Physics," "Principles of



Psychology," "Rocket Engineering," "Biochemistry." None of it could be skimmed through, or alternated that way. The greatest genius of history couldn't do it. And a senseless jumble like that—No, Alaric was just turning pages. He must be—a moron?

*Well, I'm tired. Might as well go to bed. Tomorrow's Sunday—good thing we can take holidays again, and sleep late.*

There were a good fifty men in Richard Hammer's gang, and about ten women equally gaunt and furtive and dangerous. They moved slowly along the riverbank, cursing the rocks they stumbled on, but in a ferocious whisper. Overhead a half moon gave vague light from a cloudy sky. The river sped on its way, moonlight shimmering fitfully off its darkness, and an uncertain wind ghosted through soughing trees. Somewhere a dog howled, and a wild cow bellowed alarm for her calf—descendants of domestic animals that ran free when their masters fled or died. And most savage of all the creatures moving through that night were the humans who had likewise been thrust back into wildness.

"Dick! How much longer, Dick?"

Hammer turned at the low call and scowled back at the uncertain shapes of his followers. "Shut up," he growled. "No talkin' on march."

"I'll talk when I please." The voice was louder.

Hammer hunched his great shoulders and thrust his battered hairy face aggressively into the moonlight.

"I'm still boss," he said quietly. "Anytime you wanta fight me for the job, go ahead."

He had their only remaining firearm, a rifle slung over his back and a belt of a few cartridges, but with knife and club, fists and feet and teeth he was also the deadliest battler in the gang. That was all which had kept him alive, those unending dreadful years of feud and famine and hopeless drifting, for no gangman was ever safe and a boss, with his own jealous subordinates to watch as well as outsiders, least of all.

"O.K., O.K.," yielded the other man sullenly. "Only I'm tired an' hungry, we been goin' so long—"

"Not much farther," promised Hammer. "I rec'nize this territory. Come on—an' quiet!"

They moved ahead, stumbling, half asleep with weariness, and the terrible gnawing void in their bellies was all that kept them going. It had been a long journey, hundreds of miles of devastated southland, and it was hard, bitterly hard to pass these comparatively rich farms without lifting more than a few chickens or ears of corn. But Hammer was insistent on secrecy, and he had dominated them long enough for most of them to give in more or less automatically. He had not yet chosen to reveal his plans, but this far into "enemy" country they must involve fighting,

The moon was lowering when Hammer called a halt. They had topped a high ridge overlooking a darker mass some two miles off, a town. "You can sleep now," said

the chief. "We'll attack shortly before sunrise. We'll take the place an' then—food! Houses! Women! Likker! An' — more."

The gang was too tired then to care about anything but sleep. They stretched on the ground, lank animal figures in clumsy garments of

leather and ragged homespun, carrying knives and clubs, axes, even spears and bows. Hammer squatted motionless, a great bearded gorilla of a man, his massive face turned toward the sleeping town. A pair of his lieutenants, lean young men with something hard and deadly



in their impassive countenances, joined him.

“O.K., Dick, what’s the idea?” muttered one. “We don’t just go tearin’ in; if that was all, there’re towns closer to where we came from. What’re you cookin’ now?”

“Plenty,” said Hammer. “Now don’t get noisy, an’ I’ll explain. My notion’ll give us more’n a few days’ food an’ rest an’ celebration. It’ll give us—home.”

“Home!” whispered the other outlaw. His cold eyes took on an odd remote look. “Home!” The word tastes queer. I ain’t spoke it so long—”

“I useta live here, before the war,” said Hammer softly and tonelessly. “When things blew up, though, I was in the army. The plagues hit my unit, an’ those who didn’t die the first week went over the hill. I headed south, figgerin’ the country’d busted up an’ I’d better go where it’d be warm. Only too many other people got the same idea.”

“You’ve told us that much before.”

“I know, I know, but—anybody who lived through it can’t forget it. I still see those men dyin’—the plague eatin’ ’em. Well, we fought for food. Separate gangs attacked when they met. Until at last there were few enough left an’ things picked up a little. So I j’ined the village an’ tried farmin’.”

The dog howled again, closer. There was an eerie quavering in that cry, something never voiced before the mutations began. “That mutt,” growled one of the gang-

men, “will wake the whole muckin’ town.”

“Nah, this place has been peaceful too long,” said Hammer. “You can see that. No guards nowhere. Why, there’re sep’rate farms. *We* had to fight other men, an’ then when we finally settled down it was the bugs an’ blights, an’ at last the floods washed our land from under us an’ we had to take to gang life again. Then I remembered my ol’ home town Southvale. Nice farmin’ land, not too bad weather, an’ judgin’ by reports an’ rumors about this region, settled down, a’most rich. So I thought I’d come back—Hammer’s teeth gleamed white under the moon.

“Well, you always did love t’hear y’rself talk. Now suppose you say what your deal is.”

“Just this. The town’s cut off from outside by ordinary means. Once we hold it, we can easy take care o’ the outlyin’ farms an’ villages. *But*—you can see the gov’ments’s been here. Few bugs in the crops, so somebody must’a been sprayin’. A jet overhead yesterday. An’ so on.”

They stirred uneasily. One muttered, “We don’t want no truck with the gov’ment. They’ll hang us f’r this.”

“If they can! They’re really not so strong. They ain’t got aroun’ to the South at all, ’cept f’r one or two visits. Way I figger it there’s only one gov’ment center to speak of, this town out in Oregon we heard about. We can find out ’zac’ly

from the people we catch. They'll tell!

"Now look. The gov'ment must deal with Southvale, one way 'r 'nother. There ain't enough cars 'r roads, they must use planes. That means one'll land in Southvale, sooner 'r later. The pilot steps out—an' we've got us a plane. I ain't forgot how to fly. A few o' us 'r maybe we can ferry a lot, fly to Oregon an' land at night near the house o' some big shot, the President even, whoever he is. The plane's pilot'll tell us what we need to know. Those jets just whisper along, an' anyway nobody expects air attack any more. We'll be just another incomin' plane if they do spot us.

"We capture our big shot, an' find out from him where the atom bombs're kept. There must be some stockpiled near the city, an' our man'll make a front f'r us to get at 'em. If he ain't scared f'r himself, he's got a family. We set the bombs an' clear out. The city blows. No more gov'ment worth mentionin'. With what we've taken from the arsenals, we'll hold Southvale an' all this territory. We'll be be bosses, owners—kings! Maybe later we c'n go on an' conquer more land. There'll be no gov'ment t' stop us."

He stood up. His eyes caught the moonlight in a darkly splendid vision of power and destiny, for he was not, in his own estimate, a robber. Hardened by pain and sorrow and the long bitter fight to stay alive, he was more of a conqueror, with the grandiose dreams

and at least something of the driving energy and transcendent genius of an Alexander or a Napoleon. He genuinely hoped to improve the lot of his own people, and as for others—well, "stranger" and "enemy" had been synonymous too long for him to give that side of it much thought now.

"No more hunger," he breathed. "No more cold an' wet, no more hidin' an' runnin' from a stronger gang, no more walkin' an' walkin' an' never gettin' nowheres. Our kids won't die before they're weaned, they'll grow up as God meant they should, free an' happy an' safe. We c'n build our own future, boys—I seem t' see it now. a tall city reachin' f'r the sun."

His lieutenants stirred uneasily. After some ten years of association they recognized their chief's strange moods but could not fathom them. His enormous ambitions were beyond the scope of minds focused purely on the daily struggle for life, they were awed and half afraid. But even his legion of enemies and rivals acknowledged Hammer's skill and audacity and luck. This might work.

Their own ideas of a future went little beyond a house and a harem, But to smash the government was a cause worth giving life for. They associated it with the disaster, and thus with all their woes. And it was their enemy. It would kill them, or at least lock them up, for deeds done when life depended on ruthless action. It would certainly never permit them to hold this green and lovely land.

Unless—unless!

The dog had been snuffling around the outlaw camp, a vague misshapen shadow in the fleeting moonlight. Now he howled once more and trotted down the ridge toward the dark silent mass of the town.

Alaric Wayne woke up at the sound of scratching. For a moment he lay in bed, mind still clouded with sleep. Moonlight streamed through the window to shimmer off the tumbled heaps of books and apparatus littering the room. Outside, the world was a black and white fantasy of bulking shadow, dreaming off into the remote star-torched sky.

Full wakefulness came. Alaric slid out of bed, went to the window, and leaned against the screen. It was his dog, scratching to get in. And—excited. He raised the screen and the animal jumped clumsily over the sill.

The dog whined, pulled at Alaric's leg, sniffed toward the south and shivered. The boy's great light eyes seemed to deepen and brighten, flash cold in the pouring moonlight; shadow-masked, his thin face was not discernible, but its habitual blankness slid into tight lines.

He had to—think!

The dog was warning him of danger from the south. But, though the mutation shaping the canine brain had given it abnormal intelligence, he was still a dog, not qualitatively different from the rest of his species, not able to understand or reason above an elementary

level. Three years before, Alaric had spotted qualities in the pup by certain signs, and raised and trained it, and there was a curious half-report between them, a mutual understanding. They had co-operated earlier, on their long hikes, to hunt or to avoid the wild dog packs, but now—

There was danger. Men outside town, to the south, with hostile intentions. That was all the dog had been able to gather. It would have been enough for any normal human, as a basis of action. But Alaric wasn't normal.

He stood shivering with effort, clenching his hands to his forehead as if to prevent a physical disintegration of his frantically groping brain. What did it mean? What to do?

Danger—danger was clear enough, and primitive instinct revealed the action one must take. One ran from the packs of human boys when they intended to commit mayhem on a mutant, and hid. One skirted the spoor of wild dogs or the bears beginning to spread since hunting fell off. Only in this case—slowly, reluctantly, fighting itself, his shuddering mind spewed out the conclusion—in this case, one couldn't run. If the town went, so did all safety.

Think—*think!* There was danger, it couldn't be run from—what to do? His mind groped in fog and chaos. It could grasp at nothing. Disjointed logic chains clanked insanely in his skull.

Reason did not supply the answer, but instinct came, the instinct which

would have surged to the fore under the pressure of immediate peril, and now finally broke through the swirling storm of a mind trying to think.

Why—it was so simple. Alaric relaxed, eyes widening with the sheer delightful simplicity of it. It was, really, as obvious as—why, it had all the primitive elementariness of the three-body problem. If you couldn't run from danger—you fought it!

Fighting—destruction—yes, something to destroy. but he would only have the newly reclaimed powerhouse available—

He scrambled into his clothes with frantic speed. A glance at stars and moon told him, without his thinking about it, how long to sunrise. Not long—and in his own way he knew the enemy would attack just before dawn. He had to hurry!

He vaulted out the window and ran down the silent street, the dog following. All the town's electrical and electronic equipment was stored at the powerhouse. It would be quite a while before the whole community had electricity again, but meanwhile the plant ran several important machines, charged storage batteries, and performed other essential services.

The building stood beside the river, the only lit windows in town besides the police station glowing from its dark bulk. After the war there had been no time, supplies, or parts to spare for the generators, and they had been plundered to repair the vital farm equipment, but

recently the government had delivered what was necessary to get the water turbines going again. It had occasioned a formal celebration in Southvale—another step up the ladder, after that long fall down.

Alaric beat on the door, yelling wordlessly. There came the sound of a scraping chair and the maddeningly slow shuffle of feet. Alaric jittered on the steps, gasping. No time, no time!

The door creaked open and the night watchman blinked myopically at Alaric. He was an old man, and hadn't gotten new glasses since the war. "Who're you?" he asked. "And what do you want at this hour?"

Alaric brushed by unheedingly and made for the storeroom. He knew what he needed and what he must do with it, but the job was long and time was growing so desperately short.

"Here . . . hey, you!" The watchman hobbled after him, shaking with indignation. "You crazy mutie, what do you think you're doing—?"

Alaric shook loose the clutching hand and gestured to his dog. The mongrel snarled and bristled, and the watchman stumbled back, white-faced. "Help!" It was a high, old man's yell. "Help, burglar—"

Somehow words came, more instinctive than reasoned. "Shut up," said Alaric, "or dog kill you." He meant it.

The animal added emphasis with a bass growl and a vicious snap of fangs. His head reeling, his heart seeming to burst his ribs,

the watchman sank into a chair and the dog sat down to watch him.

The storeroom door was locked. Alaric grabbed a heavy wrench and beat down a panel. Tumbling into the storeroom, he grabbed for what he needed. Wire—meters—electronic tubes—batteries—*hurrr, hurrry!*

Dragging it out into the main room before the great droning generators, he squatted down, a tattered demalion gnome, eyes like blued metal, face tautened into a savagery of concentration, and got to work. Through a visual blur, the guard stared in uncomprehending terror. The dog watched him steadily, with sullen malevolent hope that he would try something. It was embittering, to hate all the world save one being, because only that being understood—

False dawn glimmered wanly over the land, touching houses and fields with wandering ghost fingers, glittering briefly off the swift-flowing river before deeper darkness returned. Hammer's gang woke with the instant animal alertness of their kind, and stirred in the fog-drifting twilight. Their scant clothes were heavy with dew, they were cold and hungry—how hungry!—and they looked down at the moveless mass of their goal with smoldering savage yearning.

"Fair is the land," whispered Hammer, "more fair 'n land's ever been. The fields 're green t' harvest an' the fog runs white over a river like a polished knife—an' it's our land, our home." His voice rose in

hard snapping command: "Joe, take twenty men an' circle north. Come in by the main road, postin' men at the edge o' town an' the bridge over the river, then wait in the main square. Buck, take your fifteen, circle west, an' come in the same time as Joe, postin' men outside town an' in that big buildin' halfway down Fifth Street—that's the machine shop, as I recall, an' I *hope* you c'n still read street signs. Then join Joe. The rest follow me straight no'th. Go as quiet as you can, slug 'r kill anyone you meet, an' be ready f'r a fight but don't start one. O.K.!"

The two other groups filed down the hill and vanished into misty dusk. Hammer waited awhile. He had previously divided the gang into bands assigned to his lieutenants, reserving the best men for the group immediately under him. He spoke to them, softly but with metallic rapidity:

"Accordin' t' what I remember o' Southvale, an' to what I seen elsewhere, they don't expect nothin' like this. There've been no bandits here f'r a long time, an' anyway they'd never think a gang had the skill and self-control t' sneak through the fat lands farther south. So there'll be no patrol, just a few cops on their beats—an' too sleepy this time t' give us much trouble. An' nearly all the weapons 're gonna be in the police station—which is what we're gonna capture. With guns, we'll control the town. But f'r the love of life, don't start shootin' till I say to. There may be armed citizens, an' they c'n raise hell

with us 'nless we handle 'em right."

A low mutter of assent ran along that line of haggard, bearded, fierce-eyed men. Knives and axes glittered in the first dim dawn-flush, bows were strung and spears hefted. But there was no restlessness, no uncontrollable lust to be off and into battle. They had learned patience the hard way, the last sixteen years. They waited.

Timing wasn't easy to judge, but Hammer had developed a sense for it which had enabled him to pull several coups in the past and served him now. When he figured the other groups were near the outskirts of town, he raised his hand in signal, slipped the safety catch on his gun, and started down the hill at a rapid trot.

The white mists rolled over the ground, but they needed nothing to muffle the soft pad of their feet, most bare and all trained in quietness. Grass whispered under their pace, a staked-out cow lowed, and a rooster greeted the first banners of day. Otherwise there was silence, and the town dreamed on in the cool twilight.

They came onto the cracked pavement of the road, and it was strange to be going on concrete again. They passed an outer zone of deserted houses. As Hammer had noticed elsewhere, Southvale had drawn into a compact defensive mass during the black years and not grown out of it since. As long as there were no fortified outposts, such an arrangement was easy to overrun. Still, the outlaws were enormously outnumbered, and had to counter-

balance the disadvantage by the cold ruthlessness of direct action. Hammer stopped at the edge of habitation, told off half a dozen men to patrol the area, and led the rest on to the middle of town. They went more slowly now, senses strainingly alert, every nerve and muscle taut with the expectancy of danger.

Hoofs clattered from a side street. Hammer gestured to a bowman, who grinned and bent his weapon. A mounted policeman came into view a few blocks down. He wasn't impressive, he had no sign of office except gun and tarnished badge, he was sleepy and eager to report to the station and then get home. His wife would have breakfast ready—

The bow twanged, a great bass throb of music in the silent misty street. The policeman pitched out of his saddle, the arrow through his breast, the astonishment on his face so ridiculous that a couple of gangmen guffawed. Hammer cursed; the horse had reared, screamed, and then galloped on down the street. The clattering echoes beat at the walls of the house like alarm-crying sentries.

A man stuck his head out the window of a dwelling. He was drowsy, but he saw the unkempt band outside and yelled—a choked gurgle it was, drowned in an arrow's blood-track before it had been properly born.

"Snagtooth an' Mex, get in that house an' silence anyone else!" rapped Hammer. "You five"—he swept an arm in an unconsciously



imperial gesture—"take care o' anyone else here who heard. The rest *come on!*"

They ran down the street, disregarding noise but not making much anyway. The town had changed considerably, but Hammer remembered the layout. The police station, he thought briefly and wryly, he knew very well—just about every Saturday night, in the old days.

They burst onto that block and raced for the station. There it was, the same square and solid structure, dingy now with years, the trimmings gone, but there were horses hitched before it and the door stood ajar—

Through the door! The desk sergeant and a couple of men gaped blankly down the muzzle of Hammer's gun, their minds refusing to comprehend, their hands rising by stunned automatism. Others of the gang poured down the short halls, into every room. There came yells, the clatter of feet, the brief sharp bark of a gun and the racket of combat.

Hoofs pounded outside. A gun cracked, and one of Hammer's men standing guard at the door, fell. Hammer himself jumped to the window, smashed the glass of it with his rifle butt, and shot at the half-dozen or so mounted police outside—returning from their beats, no doubt, and alarmed at what they saw.

He had little opportunity to practice. Shells were too scarce. His first shot went wild, the second hit

a horse, the third was as ineffectual as the first. But the police did retreat. They weren't such good shots either, though a couple of slugs whined viciously close, through the window and thudding into the wall beyond.

"Here, Dick!" His men were returning from the interior, of the building, and they bore firearms, bore them as they would something holy and infinitely beautiful, for these were the way to a life worth living. "Here—shootin' weapons!"

Hammer grabbed a submachine-gun and cut loose. The troopers scattered, leaving their dead, and fled down the streets. And there were those other two bands entering—Hammer laughed for sheer joy.

"We got the whole station," reported one of his men. "Rob got it in the leg, an' I see they plugged Little Jack an' Tony. But the place is ours!"

"Yeah. Lock up these cops, take what weapons an' horses you need, an' ride aroun' town. Herd everybody down into the main square in the center o' town. Be careful, there'll be some trouble an' killin', but we don't have to be on the receivin' end o' any o' it. Mart, Rog, an' One-Ear, hold the station here an' look after our wounded, Sambo an' Putzy, follow me. I'm goin' t' the square now to—take possession!"

There was noise in the street, running and stamping feet, shouts and oaths and screams. Now and then laughter or gunfire. Roderick

Wayne gasped out of sleep, sweating. What a dream! Nightmare recollection of the black years—

*No dream!*

There was a tremendous kicking and beating on the door, and a voice bawling in some uncouth accent: "Open up in there! Open up in the name o' the law!"

More laughter, like wolves bay-ing. Someone yelling. A cry that choked off into silence. Wayne jumped out of bed. Even then he was dimly surprised to find he wasn't shaking and gibbering in blind panic. "Get Al, Karen," he said. "Stay inside, in a back room. I've got to look into this."

He stopped in the living room to get his rifle. It was only a souvenir now, few cartridges left, but he had killed men with it in the black years. *And must I go through that again? No—please not!*

Wood split and crashed, and a man leaped into the house over the fallen door. Wayne saw the pistol and dropped his own unloaded rifle. He remembered such ragged figures, the shaggy wolf-eyed men whose weapons were all too ready. The outlaws had returned.

"Smart," nodded the gangman. "'Nother see 'n' I'd'a scragged you. Outside."

"What . . . is . . . this?" Wayne's lips were stiff.

"Get out!"

Wayne went obliquely, praying he could draw the bandit out of the house. "If it's loot you want," he said, fighting to keep his voice

level, "I'll show you where the silver is."

Another gangman entered. He had abandoned his unaccustomed gun for his old ax. "Ever'body out o' here?" he asked.

"I just got in," said the first. "I'll search it myself. Find y'r own house." He turned on Wayne and slammed him in the stomach with one fist, "Scram, you—down t' the main square!"

Retching, Wayne staggered back, and outside mostly by chance. Sick and dizzy, head roaring like his collapsing world, he leaned against the wall.

"Rod!"

He turned, unbelieving. Karen had just come around the side of the house, pale but outwardly composed. "Are you all right, Rod?" she whispered.

"Yeah . . . yeah . . . but you . . . how—?"

"I heard them talking and slipped out a window. But Rod—Al's gone."

"Gone!" Briefly, new dismay shook Wayne. Al—whatever the mutant was, Al was his son. Then relief came, realization. "He must have sneaked out, too. He's all right. He knows how to run and hide—all mutant kids learn that." His mind added grayly: *And in the next generation all human kids will have to learn it.*

"But us—Rod, what is this?"

Wayne shrugged and started down the street. "Town's apparently captured," he said.

"Outlaws—we have to run, Rod! Have to get away!"



"Not much use, I'm afraid. This is the work of a well-disciplined group under a smart leader. They must have come up from the south, resisting the temptation to plunder on the way. They took us by

complete flat-footed surprise, overpowered the police—I recognized Ed Haley's pistol in that bandit's hand—and are now rounding us up in quite a methodical fashion. I wasn't just shoved out, I was ordered

to report to the square. That suggests they're guarding all ways out. Anyway, we can't flee right now."

They had fallen in with a group of citizens moving with the dumb blank obedience of stunned minds toward the square under outlaw guard. The gang was having little trouble. They went from house to house, forcing the inhabitants into the street. The work went fast.

There was fighting now and then, short and sharp, ending in blow of club or knife or bullet. A couple of families with guns stood off the invaders. Wayne saw fire arrows shot into the roofs of those houses.

He shuddered and bent his head to Karen's ear. "We do have to get out as soon as we can," he muttered. "If we can. They're disciplined now, and wholly merciless. Once we're completely rounded up, the discipline will break but the ruthlessness stay in such an orgy of looting and drinking, burning and rape and murder, as has always followed barbarian conquests."

"They can't stay long," she answered desperately. "The government . . . this is on the air route—"

"That's what I can't figure out. They must know they can't remain, so why did they come here in the first place? Why not raid the lands closer to home? Well—we'll have to see, that's all."

The—herd—of citizens entered the square and walked toward the little memorial in its center with the queer blind shuffle that cattle in a stockyard chute have. There

were other outlaw guards posted around the square and on the memorial, weapons ready. The monument was a granite shaft with a stone bench on each side, and seated there—

Wayne did not remember the bearded giant, but Karen caught a sudden gasp of recognition. "It . . . it . . . Rod, it's Hammer. Richard Hammer!"

"Eh?"

"Don't you recall—the mechanic at the service station—we always used to get our gas there, and once when I smashed a fender on the car he fixed it so you wouldn't notice—"

The chief heard them. There weren't many people in the square yet, and the early sun struck dazzling off Karen's hair. "Why, it's Miz' Wayne," he said. "Howdy Miz' Wayne."

"H-h-hello," faltered Karen.

"Lookin' purtier 'n ever, too. Wayne, you had all the luck."

The mathematician shouldered his way forward, suddenly weak with a dreadful clawing fear. "Hammer—what is this?" he got out.

"I'm takin' over Southvale. Meet y'r new boss."

"You—" Wayne swallowed. He choked down the panic rising in him and said in a level, toneless voice: "I gather you've become chief of this band and led it back here for a raid. But—you must know you can't get away with it. We're on an airline route. The government will know."

—Hammer smiled wearily. "I've figured all that out. I intend to

stay here. I'm gatherin' all the folks t' tell 'em t' be good, because we don't mind killin'. But if y're really interested—" He sketched his further plans.

"You're crazy—it's not possible."

"A lot o' less possible things have happened. If you all, not too far no'th, felt safe, what about the gov'ment 'way out in Oregon? We'll do it!"

"But even if you can—Hammer, do you realize the government is the only link left with our past, our civilization? You'd throw man back a thousand years."

"So what? Wayne, don't you nor anybody else hand me none o' that crap 'bout law an' order an' humanity. You're fifteen years too late. You an' your kind made us outlaws, drivin' us away when we came starvin' to you, houndin' us south an' then in your fat smugness forgettin' about us. It's been hard, Wayne, battle an' death an' hunger all those years. We had t' get hard ourselves, t' stay alive."

"You could have stuck it out in the north as we did, and raised your own food free from most bandits."

"Free only because so many people like us went south. Nor were most o' us farmers, with land an' equipment an' experience. Anyway you did drive us out when you were strong. I ain't blamin' you. You had t' live. But it's our turn now, so shut up." Hammer's eaglesque eyes swung to Karen, he smiled. It was a winter-cold smile, warmth and humor had died long ago in him. "You, I'll be

seein' more of," he said. "It's been so long—"

The square was well filled with people now, and more were arriving and being herded into side streets and buildings. Some were still numb. Some wept or prayed or implored or tried to ingratiate themselves, some cursed and threatened, some retreated into impassive silence. But—prisoners all. Captured, impotent, legitimate prey.

Hammer turned as an outlaw galloped up, thrusting his horse through the crowd without regard for their safety. "What is it?" asked the chief, not anxiously. His victory was too tremendously evident.

"I dunno—some trouble down by the river," said the gangman. "About half Joe's detail ain't showed up yet."

"Hm-m-m? Musta found some likker."

"Yeah—Hey—*What's that?*"

Hammer turned. He couldn't see much sitting down. Huge and shaggy and ablaze with the arrogance of his triumph, he sprang lithely onto the bench and looked north along the street. He grinned, then laughed, then shouted with humorless mirth. "Lamp that, boys. Some crazy mutie—*look* at him!"

Wayne was so placed that he could also see down that street. His heart staggered, for a black instant he couldn't believe, refused to comprehend, then—

"*Alaric.*"

The boy was coming down the street, walking slowly and carrying

an object, a fantastic wire-tangled grotesquerie of electronic surrealism, thrown together in the wildest haste and with no recognizable design. A wire led from it to a reel of cable mounted on a mule's back, and the cable snaked behind, along the road—it must go clear to the powerhouse!

How had Al done it? That cable was sacrosanct, reserved for electrifying the airport. That apparatus, the invaluable parts in it—how had he gotten them? How—why? *Why?* What mad vagary of a reasonless brain had prompted him to go thus on this darkest of mornings? What—

"Come on, kid," shouted Hammer boisterously. "Whatcha got?"

Alaric came closer. His delicately cast features were set in concentration, his strange light eyes flashing like glacial ice, not a human gleam. He lifted his device and twirled a pair of dials.

"May be a weapon," said a bandit uneasily and raised his rifle.

"Not . . . Alaric—" It was a hoarse cry from Wayne's throat, and he made a clumsy lunge for the outlaw. Hammer swept one long arm in a careless blow and sent him crashing to the ground.

The gangman squeezed the trigger on his rifle but never completed the motion. He was dead before that. Wayne, sprawled on his back, looking up through a whirling fog of grief and horror and hopeless defeat, saw the man's body explode.

It went up in a white burst of steam, a crash of rending bone and tissue and a brief glare of incan-

descence. The rifle flying from him glowed cherry red, blowing up as its cartridges detonated. Before the fragments had fallen, *something* had swept the outer edges of the square, and where the guards had stood were steam-clouded heaps of charred bone and shredded flesh.

The crowd yelled, a single beast cry half of terror, half of surging death-lusting triumph, and swept down on the remaining gangmen. Most were too demoralized to resist. Others struggled, and got a few townspeople before they were trampled under.

Hammer roared, the bellow of a pain-crazed bull, as the mob raged toward him. A horse reared as its outlaw rider was yanked from the saddle. Two slugging blows, and Hammer had cleared a way to the mount. He sprang upon its back, howling, and the attackers fell away from his insane charge.

Almost, he made it. He was on the edge of the square when a man whose brother had been killed made a long jump and grabbed the horse's bridle—grabbed it, and hung on till a dozen men held the gang boss secured.

Only one or two outlaws escaped. The rest, with the town in no mood for trials, were hanged that afternoon. Hammer asked not to be blindfolded, and they granted him that much. To the end, he stood looking out over the sun-glittering river, the rolling tree-clad hills, and the fair broad land green to harvest.

Wayne took no part in the executions. He had other things to think about.

After the celebrations, the unending parades and parties and speeches, the reorganization and the defense tightening, there was a rather grim conference in Wayne's house. He and Karen were there, seated together before the fire, and Alaric sat opposite them, nervous and bewildered. A government representative was present, a lean man who looked older than he was, Robert Boyd by name and roving presidential agent by profession. In the corner, shadow-cloaked and unnoticed, squatted the shaggy troll-shape of the dog, his sullen eyes brooding redly on the others.

"You've heard the official account," said Wayne. "Alaric, a mutant *idiot savant*, invented and built a weapon to defeat the outlaws. He's been much made of, and nobody pays any attention to Pop Hanson—he's the powerhouse watchman, and was rather rudely treated. One must make allowance for the eccentricity of genius, or so they say."

"Well, one must," nodded Boyd.

"Hardly. If so many of our people hadn't died, I'd say this was a good thing. It taught us not to be complacent and careless. More important, it at least indicated that mutants can serve society as talented members." Wayne's eyes were haggard. "Only, you see, Al didn't behave like a genius. He acted like a low-grade moron."

"Inventing that—"

"Yes, going all around Robin Hood's barn, committing violence and theft, working like a slave, risking his neck, all to build that weapon

and use it. But he told me his dog warned him hours ahead of time. Certainly he was at the powerhouse early. Don't you see, we could have been ready for the outlaws, we could have stood them off, driven their ill-armed force away with no loss to us *if Alaric had merely gone to the police with that warning.*"

Thunderstruck, Boyd swung his eyes to meet the blue vacancy of Alaric's. "Why . . . why didn't you?"

The boy stared, slowly focusing his vision and mind, face twisted with effort. He . . . his father had told him the day before . . . what was it now? Yes—"I . . . didn't . . . think of it," he fumbled.

"You didn't think of it. It just never occurred to you." Dazed, Boyd turned to Wayne. "As long as you said it yourself, I agree—*idiot savant.*"

"No." Karen spoke very quietly. "No, not in any ordinary sense. Such a person is feeble-minded in all but one respect, where he is brilliant. I used to teach school, and know a little psychology. Yesterday I gave Al some special tests I'd worked out. Science, mechanical skill, comprehension—in too many respects he's a genius."

"I give up. What is he, then?"

"A mutant," said Karen.

"And . . . this weapon—?"

"Alaric tried to tell me, but we couldn't understand each other," said Wayne. "And the thing itself burned out very quickly in use. It's just fused junk now. From what I could gather, though, and by deduction on that basis, I think

it projected an intense beam of an inconceivably complex wave form to which one or more important organic compounds in the body resonate. They disintegrated, releasing their binding forces. Or perhaps it was body colloids that were destroyed, releasing terrific surface energies. I'm just as glad I don't know. There are too many weapons in the world."

"Mm-m-m—officially I can't agree with you, but privately I do. Anyway, the inventor is still here—the genius."

"It takes more than genius," said Wayne. "It just isn't possible for any human being to sit down and figure such a thing out in detail. All the facts are available, in handbooks and texts and papers—quantum mechanics, circuit characteristics, physical constants. But even if he knew exactly what he was after, the greatest genius in the world would have to spend months or years in analytical thought, then more time in putting all those facts together into the pattern he was after. And even then he wouldn't know it all. There'd be a near-infinity of small factors interacting on each other, that he couldn't allow for. He'd have to build a model and experiment with it, the empirical process known to engineers as getting the bugs out.

"In his incoherent way, Alaric told me his only difficulty was to figure out what to do to meet the danger. All he could think of was to make some kind of weapon. But he hardly spent a second working out the details of that devil's en-

gine, and his first model was as nearly perfect as his inadequate tools and materials permitted. He *knew* how to make it."

With a shuddering effort, Boyd relaxed. He couldn't look at that small, big-headed figure in the armchair. The ancient human dread of the unknown was too strong in him. He asked slowly:

"What's the answer, then?"

"Karen and I think we've figured it out, and what little Al can tell us seems to confirm our idea. But I'll have to explain it in a round-about way. Tell me, how does a person think?"

"Think? Why . . . well . . . by logic. He follows a logical track—"

"Exactly! A track. He thinks in chains of logic, if under that we include everything from math to emotional experience. Premise to conclusion. One thing leads to another, one at a time.

"Physics and math have been able to make their great strides because they deal, actually, with the simplest concepts, which are artificially simplified still further. Newton's three laws of motion, for instance, assume that no force beyond the one set being considered is acting on a body in question; and the members of this set can be considered one at a time. We never really observe that. There is always friction, gravitation, or some other disturbing influence. Even in space there are externals. What saves physics is that these externals are usually negligibly small.

"Take a particular case. You



know the two-body problem in astronomy? Given two bodies of known mass and distance from each other, and the laws of motion and gravitation, to find their position at any past or future time. Well, it's mathematically simple. It was solved a long time ago, because there are only two interacting bodies. But the three-body problem is quite another story. Right away, with three interactions, it becomes so complex that as far as I know there's never been any general solution, and only a few special ones. As for the  $n$ -body problem—!

"Now in the biological sciences, including psychology and sociology, you can't simplify. You have to consider the whole. A living organism is an incredibly complex set of interactions, beginning, probably, on the subatomic level and going on up to the universal environment, from which the organism cannot be separated either, acting on and being acted on by that all the time. You *can't* apply our single-track analysis methods to such a case. The result is, of course, that those sciences are almost purely empirical, sociology hardly deserving the name. If, to use an illustration that's been used before, I want to tackle the three-body problem, I can and will start with the special case where one of them has zero mass. But suppose I were making an analysis of the influence of Pan-Asiatic policies on American domestic affairs before the war. I could certainly not ignore the converse case, or the existence of other countries, I'd have to consider them all at once

—which no existing math can do. Any results I got would be qualitative, nonmathematical, inexact."

"I think I see," nodded Boyd. "Of course, people can think of two or more things at once."

"That's different," said Karen. "That's a case of divided attention, each branch of the mind following its single track. It's normal enough, though carried to extremes it becomes schizophrenia."

"You get what I'm driving at," went on Wayne. "Our subhuman and human ancestors didn't need to see the world as a whole. They were only concerned with their immediate surroundings and events. So we never evolved the ability to consider an entire entity. Alaric is a mutant—"

"Some different brain structure," said Karen quietly. "The reversed internal organs may or may not be a linked characteristic. The X-rays showed no brain difference. They hardly would, as it's probably a very subtle matter of cellular or colloidal integration."

"Al didn't have to think, in our ordinary sense of the word, of how to make a weapon," added Wayne. "His extensive knowledge of scientific principles and data co-ordinated in his mind to show him that . . . well, if my guess is right, that the colloids of human bodies are resonant to a particular wave form. And at once he knew all the factors he'd need to generate that wave. It wasn't reason, as we reason, though it was thought—to him, thought on a very elementary, almost intuitive

level. Yet he wasn't able to think of telling anybody."

"I see," answered Boyd. "Humans think in chains. *He* thinks in networks."

"Yes, that's about the size of it."

"Do you think . . . we . . . can ever do that?"

"Hm-m-m—I don't know. Since intelligence seems to depend on upbringing among normal humans, whereas genius and feeble-mindedness seem more independent of environment, and are hereditary, one might argue that they are both mutations, in the individual or an ancestor. Some people, such as Nikola Tesla, seem to have had a degree of network-thought ability, and the fact that Al is the son of a mathematician, who does deal with complexities, is suggestive. After all, no observed mutation has ever created a totally new characteristic. It would have to create a whole new set of genes for that. A mutation is a greater or less modification of an existing characteristic.

"The point I'm making is that humans naturally think in straight lines, but some sort of network, total-considering logic has been developed. The semanticists have their nonelementalistic principle. In math, we only add in special cases, the rest of the time we integrate, and we have our generalized calculi of vectors and tensors and the like. *But*—it doesn't come naturally. It's been worked out slowly and painfully, through many centuries. To Al, it's the natural way to think; but, as like most mutations it involves a loss elsewhere.

the simple straightforward logic of humans is unnatural to him and since he is just a kid, and probably not a genius anyway—merely an ordinary network thinker—he hasn't seen the principles of that logic, any more than a human his age sees the principle of nonelementalism. I'd say, offhand, that both types of mind can learn the other type of thought, but not comprehend or apply it on its higher levels."

"There's another thing," put in Karen. Her eyes held a light which hadn't been there for a long time. "Rod just said it. Al should be able, with the proper training, to learn logic, at least enough to understand and communicate. His kind of thought is not adapted to the simple problems of life, but he can be taught to handle those, as we teach human children to think in terms of abstractions. Maybe . . . maybe, then, he can teach us something."

Boyd nodded again. "It's certainly worth the attempt," he said. "We have psychiatrists and other specialists at the capital. If we'd known before that you're a mathematician, Wayne, we'd have asked you there, to join the science center with which President Drummond hopes to rebuild our culture on a basis of genuine sanity. Consider yourself invited as of now. And if we and Alaric can come to understand each other—why, Wayne, you may even get your biological and sociological math. Then we may be able to pull ourselves out of this planetary mess."

"I hope so," murmured Wayne.

"I certainly hope so. And thanks, Boyd." He smiled tiredly, crookedly. "By the way, Karen, you have your superman there. The greatest genius, in his way, that the world ever saw—and if he hadn't had some kind of protective civi-

lization to grow up in and, now, to teach him the elements of thought, he'd never have lived. I'm afraid this particular kind of superman just isn't a survivor type."

"No," whispered Karen, "nor human. But he's our son."

THE END.