

Instant With Loud Voices

by Alan Dean Foster

How the devil was he going to tell Hank Strevelle that his life's work wouldn't work? As he hurried down the brightly lit white corridor, Ken Jerome tried to compose the right words as well as himself.

The remote unit via which he'd run the final check hung loosely from his right hand. His lab coat fluttered from his shoulders. The corridor was a football field of eggshell white, the remote unit a rectangular ball, and he was running, running hard and uncertainly toward the wrong goal.

There was nothing wrong with the concept of the question. It was the figuring that troubled Jerome. That, and the fact that no one knew if a machine could be mentally overstressed.

He'd spent a last hectic week reprocessing, rechecking. Wilson at MIT had confirmed his calculations, but at this late stage even Wilson's prestige might not be enough to get the question aborted. He rounded the last bend in the main corridor. The guard smiled as he held up a restraining hand. Jerome had to wait impatiently while his identity tag was checked against the records. He was panting heavily. Forty-nine unathletic years old, and it was a long time since he'd run this far with anything heavier than a new equation.

The guard was smiling at him with maddening politeness. He Was a handsome young man, probably a moonlighting theater arts student waiting for some visiting producer or director to stumble over his cleft chin.

"Nice day, sir. You should slow down. You look a little flushed."

Wait till you hit the archaic side of forty, Jerome thought. But all he said as he retrieved his ident card was, "I expect I do." The guard stood aside as the diminutive engineer hurried through the double doors.

Down another corridor, this one narrower and underpopulated. Through another check station, four glass doors strong enough to have defeated Dillinger, and into The Room. The Room was the only one in the building. It *was* the building. It had been built to house a single important entity and its attendants. Jerome was one of the attendants. The entity was DISRA—Direct Information Systematic Retrieval and Analysis.

The Room was a modest three stories high and roughly the length and width of a football field (I must be going through male menopause, Jerome thought idly, to account for all these sports metaphors here lately). As human constructions went, it was not especially awesome. Nor was the physical appearance of DISRA overwhelming. What it represented was.

The flat sides of the three-story machine was transparent, allowing inspection of the exterior components. Yellow and white monitoring lights winked on and off, giving the epidermis of the machine the aspect of a captured night sky. They indicated to any knowledgeable onlooker that the computer was powered up and working on only minor problems.

If a similar machine had been built back in the 1950's it would have covered most of North America and still been inferior in capability to DISRA. Twenty years of effort, money and intelligence had gone into its construction. Jerome had been involved with the project for the last ten of those years.

Each year new techniques, new knowledge, were acquired and immediately integrated into the design of the machine. Its architect, Henry Strevelle, was no dogmatic, blind believer in his own omnipotence. He

was as flexible as his creation and eager to adapt the best ideas of others into its framework.

If only he'll be flexible now, Jerome thought worriedly.

DISRA had been in operation for the past six years, answering questions, pondering hypotheses, dispensing immensely valuable opinions on everything from Keynesian versus Marxist economics to particle physics. When the Secondary Matrix was linked with the DISRA Prime two years ago, Catastrophe Theory had for the first time taken on the aspect of a real science. DISRA had shown itself capable of predicting major earthquakes as well as fish population stocks. Space probes of many nations and consortiums were now programmed with previously unimaginable accuracy.

Six months ago construction on DISRA Prime itself had concluded. After a month of testing, Hank Strevelle had begun the task of programming the complex for a single question.

And, Jerome knew, DISRA was too valuable to mankind for that question to be asked.

He found Strevelle conversing with two technicians. The world's greatest computer scientist was six-four, thin as an oxygen tank and nearly as pale as the enclosing walls. His hair was brushed straight back and gave him the look of a man always walking into the wind. Jerome envied him the hair as much as the brain beneath. We are all frail, he thought.

Strevelle looked away from the techs as Jerome came over. He smiled tolerantly. He knew what was coming. Jerome had been badgering him with it for weeks.

"Now Ken," he said, "you're not going to hit me with your pet peeve again, are you? Now, of all times?" He glanced at his wrist. "Five minutes to startup. Give me a break, will you?"

Jerome conducted his words by waving the remote. "I've spent all night and most of the morning hooked up with the Eastern Nexus. Everything confirms what I've been telling you since the fourth of the month. You put this question to DISRA and we're liable to lose the whole works. A computer can be overstressed. Not a normal computer, but nothing about DISRA is normal."

"You're a good man, Ken. Best theoretical engineer I ever worked with. You'll probably be chosen to run DISRA operations when I retire."

"I can't run what isn't there."

Strevelle let out a resigned sigh. "Look, there are two and a half decades of my life and most of my reputation in this cube of circuits and bubbles and agitated electrons." He jerked a thumb back at the softly humming machine. "D'you really think I'd risk all that if I believed there was the slightest chance of losing capacity, let alone more serious damage?"

"The machine runs twenty hours each day, four down for repair and recheck. Half the world depends on it to make decisions, or at least to offer opinions. Even the Soviets want it kept functional.

They haven't experienced a single wheat or corn failure in the ten years they've been relying on DISRA's predictions."

"Wilson confirms my calculations."

For a moment the great man appeared uncertain. "Kenji Wilson, at MIT?" Jerome nodded. Strevelle mulled that over, then his paternal smile and eternal optimism reasserted themselves.

"Wilson's the best alive, Ken. I won't deny that. But he bases his calculus on DISRA's own information

and DISRA doesn't seem disinclined to try the question. Besides which he doesn't know DISRA the way I do."

"Nobody alive does, Hank. You know that." He desperately tried another tack. "Look, if I can't get you to call this off, at least postpone it so I can refine the figures." He held up the remote, touched tiny buttons. A series of equations flashed across the small screen, hieroglyphs of a physics so advanced that fewer than a hundred minds in the world could comprehend it.

Strevelle shook his head. "I've seen your work for weeks, Ken. I don't buy it." He gestured toward the control booth, led Jerome toward it. "There are five senators there plus representatives from all over Europe and Asia. I can't put them off." His eyes gleamed from under brows tufted with fleece.

"You know what that group of senators promised me? That if we derive any kind of sensible answer to the question, anything at all, they're going to try and put through appropriations to double DISRA's capacity. *Double* it. I won't be around to see that happen, but I don't care. It'll be my legacy, the first computer that doesn't just approximate the ability of a human brain but equals or surpasses it."

"Run this program," Jerome said, "and you're liable not to *have* any legacy, Hank." I'm not saying it right, he told himself frustratedly. I'm not making my point strongly enough, emotionally enough. I'm a bland personality and I live with a calculator. Damn to the hundredth power! He's going to go through with it.

The equations weren't solid enough, he knew. Though given the glow of the great man's expression, Jerome wasn't sure the solidest math in the universe could have dissuaded him today. He resigned himself to the asking of the question.

Five senators. Jerome tried to tell himself that he was wrong, that Wilson was wrong. They could be. Certainly Strevelle knew what he was doing. They'd said DISRA couldn't be built and Strevelle had built it. He'd proven everyone wrong. Among his early de-tractors had been the youthful, brilliant theoretician named Kenneth Jerome.

I hope to God he proves me wrong again.

There were quiet greetings and introductions, idle conversation to cover nervousness. Only a couple of reporters had been allowed in, one from the *New York Times*, the other from *Der Spiegel*. Friends of Strevelle from the early days of derision and doubt. Now they would receive recompense for that early support. Strevelle never forgot a circuit, or a friend.

He folded himself into a chair next to the master control board, touched instrumentation, murmured to his ready associates. Jerome stood back among the curious. He was Strevelle's backup in case the great man had a stroke or forgot some item of programming. But Strevelle had the body of a man half his age and the mind of several. He would not collapse either physically or mentally.

"Quiet, please," a technician requested. The multilingual muttering in the booth faded to silence.

Strevelle thumbed a switch. "Condition?"

"Ready," replied a tech.

"Secondary, Matrix?"

"On-line," came the quiet announcement.

Strevelle was too prosaic to construct a dramatic gesture. He just touched the button.

Banks of monitors sang in unison behind the watchers. Beyond the angled glass, out in The Room, thousands of tiny indicator lights suddenly flared green, red, blue. The inspiration was wholly mechanical, but it had the look of a hundred Christmas trees suddenly winking to life simultaneously, and provoked appreciative murmurs of admiration from the non-scientists in the group.

There were eight DISRA-2's emplaced in major cities across the United States, four more in Europe, four again in Japan. The Japanese were not involved in the question because of time-sharing conflicts and other problems. Together, the sixteen constituted the Secondary Matrix. They would combine to ask the question which DISRA Prime would attempt to answer.

Six massive communications satellites were temporarily taken out of commercial service to shunt the constituents of the question to DISRA, shutting down half the communications of Europe and the continental United States for fully eight minutes. It was dark outside The Room and still not morning in London. The timing had been carefully planned to cause minimal disruption to the world's commerce.

Five months of laborious pre-programming now spewed in an electronic torrent from two continents into the waiting storage banks of DISRA Prime, filling them to capacity.

The eight minutes passed in tense silence. Jerome found that his palms were damp.

The digital clock on the wall marked time silently, continued past the eight minute mark as the technician on Strevelle's right said calmly, "Programming received."

In The Room DISRA glowed like some ponderous deep-sea monster, awaiting instructions. It's not human, Jerome reminded himself firmly. It's different, and in its limited way superior, but it's not human. Even Strevelle agrees to that.

Strevelle touched the button beneath the plate which read, "Process question," then sat back and lit a small, feminine cigar. The onlookers shuffled uneasily. A red light came on beneath another readout and the single word everyone was waiting for appeared there: WORKING.

Someone made a bad joke in French. A few people laughed softly. Everything was functioning properly. It was the import of the question that had been put to DISRA which was making them nervous, not any fear of mechanical failure.

DISRA worked on the question, digesting at incredible speed the immense volume of programming it had been fed. Normally, the most complicated inquiry took less than three minutes to solve. The digital on the wall counted.

Half an hour passed. The readout on the console glowed steadily red. WORKING. The lights behind the transparent panels of the machine flashed rapidly, efficiently. While they waited, the onlookers discussed science, politics, their personal travails and problems.

The power requirements for such processing were enormous, another reason for running the program at night. Demand in the city was way down. As it was, there was still barely enough power to meet the demand, but the local utilities had been notified well in advance and were prepared to deal with any possible blackouts. Extra power had been purchased from out-of-state utilities to help cope with the temporary drain.

Forty minutes. Jerome considered. Better that he be proven wrong, much better. Of course, even if he and Wilson were correct, nothing might happen. When it was all over he intended to be the first to congratulate Strevelle. Despite their disagreement in this, they were anything but rivals.

For the first time in several weeks his concern gave way to curiosity. After all, he was as interested as anyone else in the machine's answer.

To support DISRA's pondering, everything known or theorized about the Big Bang had been programmed into it. That included just about the entire body of physics, chemistry, astronomy and a number of other physical sciences, not to mention all of philosophy and more. All in support of one question.

When was the Big Bang and what, precisely, did it consist of?

An equation for the Creation, Jerome mused. There were a few who'd argued against asking the question, but they were in the minority and outvoted. Many prominent theologians had helped with the programming. They were as anxious for a reply as the astronomers. DISRA would answer first in figures, then in words.

Forty-five minutes. One of the technicians on Strevelle's right leaned suddenly forward but did not take his eyes from the console. "Sir?"

Strevelle glanced down at him. He'd gone through four of the small cigars and was on his fifth. "Trouble?"

"Maybe. I'm not sure. We're running at least two cyclings now, maybe more."

Jerome joined Strevelle at the technician's station. Cycling occurred when a component of a question could not be either solved or disregarded. Yet the machine was programmed to answer. Its design demanded an answer. If not shut down or if the programming was not canceled, the same information would be run over and over, at greater strength and drawing on greater reserves. It was a rare occurrence.

"Four sections cycling now, sir. If the figures are right." He looked anxiously up at Strevelle.

"Cancel it, Hank," Jerome urged him quietly. "While there's still time."

"Eight sections, sir." The technician no longer tried to hide his nervousness. "Ten. Twelve."

There were forty sections comprising DISRA Prime. Forty sections devoted to Direct Information Systematic Retrieval and Analysis. Strevelle said nothing, stared stolidly down at the console, then out at the working machine.

"We've still plenty of capacity. Let it cycle."

"Come on, Hank," Jerome muttered intensely. "It's not going to work. You've reached beyond the machine's capacity. I told you."

"Nothing's beyond DISRA's capacity. We've asked it a perfectly logical question and supplied it with sufficient information to answer. I expect an answer." He put both hands on the console and leaned forward, his nose nearly touching the slanting glass.

"Twenty sections," muttered the technician. All the other technicians were watching his station now. "Thirty... thirty-five..." Behind them something was buzzing, louder than the crowd.

"Forty... all sections cycling, sir." The technician's voice had turned hoarse.

Out in The Room there was no sign anything out of the ordinary was taking place. On the console WORKING continued to glow its steady red.

Then someone turned a spotlight on Jerome's face and just as quickly turned it out...

The glass had missed him. So had most of the flying scrap. One of the support beams had not.

Still, he was one of the first out of the hospital, and the arm was healing nicely. He didn't need it for a while anyway, since there was nothing to work on for at least a month. Strevelle was already drawing up his new plans, dictating them from his hospital bed.

The roof was mostly gone, blown skyward to fall back in or to dust the campus, but the reinforced concrete walls had held. They'd been designed to withstand Richter-scale-nine earthquakes and near nuclear explosions. A little internal blowup had strained but not shattered them.

In the remnants of The Room workmen were cleaning up the last of the debris while technicians were already discussing where to begin rebuilding. DISRA resembled a cake that had fallen in on itself. About seventy percent of the machine was completely gone, scattered across the surrounding community in tiny pieces or else vaporized during the overload. So rapid was the final cycling even the safeties had been overloaded. The city-wide blackout had lasted two hours.

Jerome strolled around The Room, picking his way carefully over the remaining debris, chatting with those technicians he knew. There was no air of depression about The Room. An experiment had failed, that was all. Time to rebuild and try it again.

A slight figure near one of the walls was neither workman nor tech. Jerome squinted, thought he recognized the man, and made his way across to him.

"Hello. Hernandez, isn't it? From the *Times*? You were in the booth with us when she blew."

The man turned away from his examination of the concrete, smiled from beneath an afterthought of a mustache and extended a hand. "Yes. You're Dr. Jerome, aren't you? I understand the old man's already planning DISRA Prime Two."

For some reason Jerome felt embarrassed. "Yes. He's incorrigible. But we have to have a DISRA. The Secondary Matrix can only handle so many of the lesser inquiries. The world needs its questions answered."

"But not today's." Hernandez chuckled. "The astronomers will have to wait at least another generation."

"For that question? I don't think the government will let them try it again. Too much money for too little return."

"Oh?" The reporter was jotting notes down on a small pad. He's old-fashioned, Jerome mused. An odd trait to find in a science reporter.

Hernandez noticed his stare. "Tape recorders aren't right for every situation. There are people working here and I don't want to bother them. You're not bothered?"

"No. Just sore. It could've been a lot worse. Ninety-five percent of the energy seemed to go skyward instead of sideways."

"I know. I put that in my article."

"So I heard. Thanks for your kindness. We're going to need all the help we can get, despite the need for a new DISRA. Our public image isn't exactly at its most polished right now."

"Doesn't matter. As you say, the world needs a DISRA, and the public hardly suffered." He waved his pen at the wall. "A few people thought DISRA was the mechanical equivalent of a human being."

"A few people believe in astrology, too. DISRA was a brilliant machine, but that's all. Its superiority was limited to a few specific areas."

"Of course." Hernandez made some more notations, then indicated the wall. His voice lost some of its usual reportorial smoothness.

"Have you noticed the lines and markings on the concrete?"

Jerome had not paid much attention to the scorching. His attention had been centered on the ruined machine in the middle of The Room. But the source of the marks was obvious enough.

"You remember that most of DISRA's exterior paneling was transparent," Jerome said. "When she blew, the intense light was slightly masked by dark circuitry." He tapped the wall. "So we got these negative images seared into the walls, sort of a flash blueprint."

"That's what I thought." Hernandez nodded slowly. "I've seen such things before, only the outline was human and not mechanical."

"Oh, you mean the Hiroshima silhouettes," Jerome said, "the outlines burnt into the streets and walls of people close to the bomb when it was dropped?"

"I wasn't thinking of them," the reporter murmured. He traced some of the circuit patterns with his pen. "These are much more detailed, more delicately shaded than just a plain outline."

"That's explainable." Jerome wondered what the reporter was driving at.

"You know," said Hernandez quietly, "there's intelligence, and there's intelligence. There are representations of man and representations of man. Sometimes you can ask too much of a man just as you can of a machine. It's taken us a long time to reach the stage where we could make a machine suffer like a man."

"If it suffered," said Jerome chidingly, "it didn't suffer like a man."

"I wonder," said the reporter.

"You said you've seen such markings before." Jerome tried to bring the conversation back to a sensible tack. "If not the Hiroshima markings, then where?"

Hernandez turned, sat down on a broken conduit and regarded the remnants of the machine the bulk of whose substance had vanished.

"On an old shroud, in Italy, in Turin..."