

NERD U.

What is it about MIT, anyway? By Alexander Theroux

ILLUSTRATIONS • HAL MAYFORTH

THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY — founded in 1865 by William Barton Rogers, who was also its first president — is a place matchless in a thousand ways, the virtual symbol just about everywhere of wizardry, scientific genius, and technological innovation. A distinguished natural scientist himself, Rogers sought to create a new kind of academic institution relevant to the times and to the nation's needs. It was known as "Boston Tech" when it comprised but a single building on the other side of the Charles. It was called *the* MIT for a while. "Tech," a bit out of date, is still used by older folks. "The Institute" is administrative and pedantic. And "The 'Tute" almost always has an intentionally sardonic ring to it.

I grew up in nearby Medford, where, tough and cool, we used to refer to MIT — envy-by-obversion — as the "Mental Institute for the Touched." This was actually the opposite of what we felt. Whenever I passed the court off Memorial Drive, looking up at the dome and reading those historic names on the buildings, I always felt a secret stir of reverence in my heart. I've been teaching at MIT for three years now, and still feel the same.

There are inevitable comparisons, of course, to Harvard, its formidable rival down the street. (Harvard attempted to annex MIT in 1870 and in fact has tried to do so several times since.) A story is told of a fellow at a Cambridge supermarket standing in an express checkout line limited to ten items; he has fifteen. "That's either an MIT student who can't read," so the joke goes, "or a Harvard student who can't count." It's commonly repeated that Harvard students know nothing

about everything and that MIT students know everything about nothing.

There's a Harvard look, actually, a sort of half-posturing, half-expensive, self-congratulatory slovenliness. Nothing like this exists at MIT. The students have no time for it; there's too much else to do. The difference between the schools is that between being and doing. I spent five years teaching at Harvard where the students, reflecting an administrative attitude, I think — a sort of centripetal narcissism — always talked about themselves. At MIT, it's just the reverse. Students, often neglecting themselves in a rather centrifugal way, tend to get lost in the subjects they're studying. Sometimes too lost. Tragically lost. It's often the upshot of what I call "nerd commitment," the pursuit of knowledge becoming a way of life.

I would say that the essential distinction between the two is that, while at Harvard the difficulty is getting in, at MIT the difficulty is getting out. The workload at MIT is ferocious. A student needs 360 credits to graduate. Among requirements — along with two years of gym — are *eight* courses in the humanities, arts, and social sciences, including a significant three- or four-course concentration extra in one chosen field. Now throw in two semesters of physics, two semesters of calculus, one semester of chemistry or biology, one lab course (biology, electricity, strobe, and so on), and then three science distribution courses such as linear algebra, computer programming, or astrophysics. A program for two bachelor degrees is listed in the course catalog — there are geniuses at MIT — and there's a freshman credit limit for overachievers.

There are students in their senior year at MIT who because of work have not traveled into Boston more than a couple of

during their undergraduate careers. Pass/fail was first implemented when too many freshman chose suicide over studying upside down to keep awake for four years. The grim joke about the school colors, maroon and gray, is apposite — “blood on concrete.”

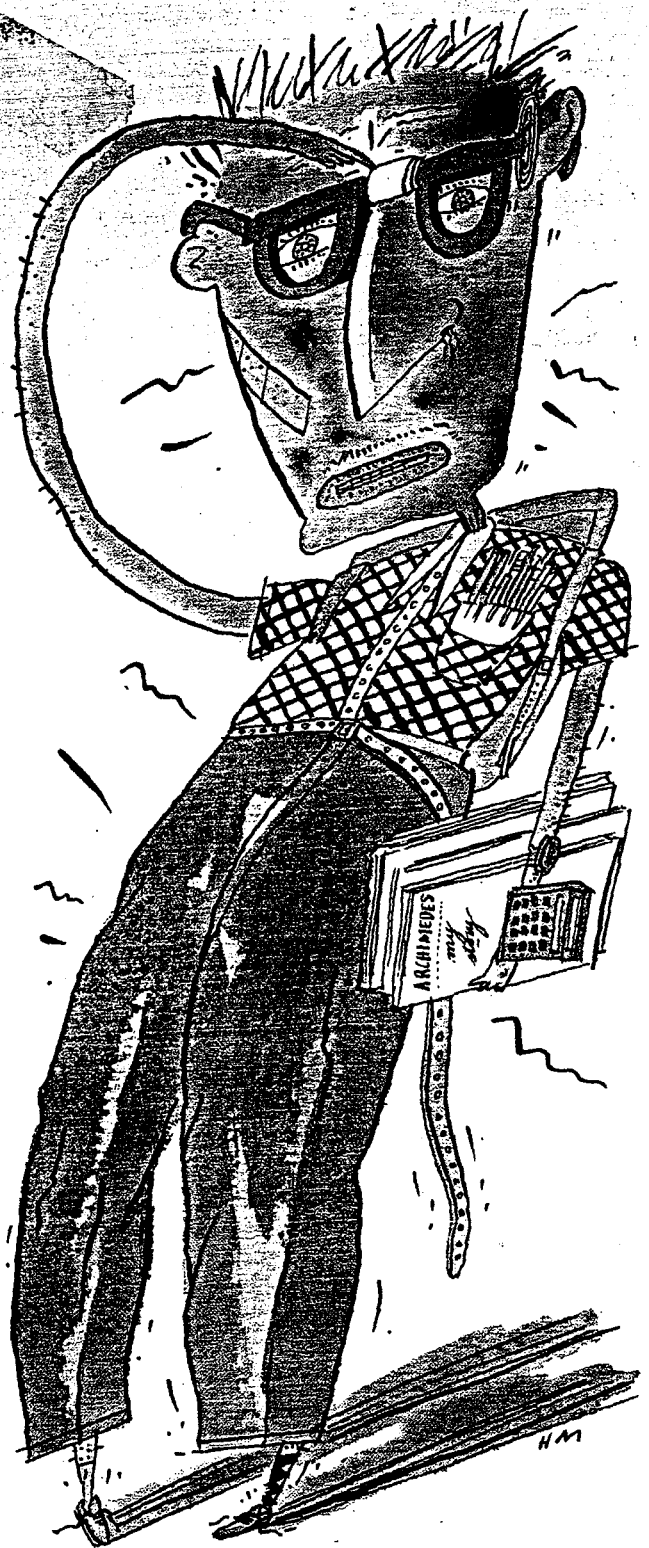
LONELINESS is the number one problem at MIT. Corridors are long, rooms large, buildings gray. A deep silence pervades the place. People seem to communicate by means of posters, wall notices, and personals in the paper. “The state of mental health here is atrocious!” complained one student who could have spoken for many. MIT doesn’t have the same sort of social life other colleges do. It’s not merely that it’s the West Point of technology. Students are boxed away in dorms, and friendships are cultivated by and tend to be limited to floors and suites and rooms. Students also come from ninety-six countries. And although there were 2,200 women in 1985 — half of them undergraduates — there’s a woeful social unbalance. It doesn’t matter that most of the dorms are co-ed. Work is a refrigerant, and tension, worry, and grief anaphrodisiacs.

At MIT full weeks are devoted to staying awake (most students are caffeine freaks: I’ve never seen so many soft drinks consumed in my life) and completing things like problem sets, lab projects, term papers, and so on. There’s one course in aeronautical engineering — a twenty-four-unit course for two semesters — that takes a minimum of twenty-four hours a week. And so while they’re having a knees-up at Yale and someone’s being depantsed in the Harvard Yard, students at MIT are discussing eigenvalues or building geodesic domes or trying to find the surface area of the roof in Kresge Auditorium.

Oddly enough, the social calendar is far from infirm. Quite the opposite, in fact. There are supposedly more clubs and organizations at MIT than anywhere else. There’s the Rocket Society. And the Frisbee Club, the Guild of Bell Ringers, and the Tech Model Railroad Club. There are computer clubs. And a singing group called the Corollaries. There’s the Tiddlywinks Association. And even the Exotic Fish Society, which maintains a 125-gallon tank and holds monthly meetings to discuss fish, fish food, and aquatic plants.

And there are sports. An unofficial one, unique to MIT, is “hacking.” It is often but by no means always a solitary sport. A hack, briefly, is a prank. Hacking originally began with students trying to get into the computer rooms at night in order to have time with the machines, and so the sport has had distinct nerd connotations from the beginning. To a hacker, a closed door is an insult and a locked door is an outrage. Schemes have greatly diversified, with adventures now linked to the art of postponing work — punting,” in MIT lingo. Generally, ingenious plots are hatched and scenarios acted out in dangerous air shafts, through roof doors, into machine rooms, and so on, and then signed with various logos such as “Thumbsucker” or “4Q” or “Mr. McWeenie.”

There are pinball hackers, chess hackers, hackers of practical jokes. All kinds. The term isn’t restrictive. There are astronomy hackers. There are lock hackers who with a bobby pin can snap a deadbolt or mortise-cylinder lock in a matter of seconds. It’s inquisitive meddling, the attempt to discover information while poking around. The term *computer hacker*, however, is redundant. These are pure hackers, computer programmers and designers who regard computing as the



HOW TO SPOT AN MIT NERD

“They tend to wear their pants too high, making them too short, and short-sleeved orlon shirts (always buttoned at the top) with collars too long and pointy. They wear loopless trousers, with a foot of belt hanging limp in front. Characteristically, nerds have a chipmunkish look.”

“Of course we have nerds. Every place has nerds.”

We asked several people connected with MIT whether they thought Alexander Theroux's characterization was fair. Some responses:

“It took me two weeks of being there before I met my first stereotypical nerd: he was carrying eight books and had a calculator strapped to his belt. His hair was even receding. I've finally come to accept nerds, though, because I saw so many at MIT.”

— Cathy Weeks, consultant, Arthur D. Little, Inc.
Cambridge, Class of '84

“Sure, some people wear thick glasses and look gaunt. You see them on rare occasions. But that doesn't mean there's not a personality behind it.

“Spending countless hours in front of a computer doesn't do anything to develop the personality of someone nineteen or twenty years old who is a shy person. But when he gets away for vacation and when he gets out, he gets a chance to develop.”

— Charles H. Spaulding, president of Spaulding Investment Company,
Burlington, Massachusetts, Class of '51

“Nerds definitely exist as a subculture. Certainly not all students at MIT are nerds, but even nerds are aware of the label, and they joke about it. I lived for one summer with three MIT students. One night, after meeting my date, who was a student at MIT, one of my roommates shook his head mournfully and pulled me aside, saying, 'Don't go out with people from MIT — they're nerds. We know. We're nerds, too.'”

— Vicki Hengen, bartender, MIT's Muddy Charles Pub, Cambridge

“Stereotypes are difficult to get rid of. Of course we have nerds. Every place has nerds. But they are as ridiculed inside MIT as outside. They're not accepted. There are also some spectacular, charming, sociable people. There are lots of subcultures here: jocks, party people, literary types. MIT is also thirty percent women. That's another thing people don't know.”

— Robert Hulsizer, retired MIT physics professor, Cambridge

“I think of nerds as unfashionably focused people. Larry Bird is a nerd, as John Havlicek was not. Vladimir Horowitz is a nerd, as Artur Rubinstein was not. At MIT, nerds are free of the intellectual ancestor worship you find at other schools. They just have these giant brains aimed at the future.

“These people may save us from Japan. Now that's a whole *nation* of nerds.”

— Christopher Lydon, WGBH-TV news anchor, Boston,
former MIT writing instructor.

most important thing on earth. To them nothing else matters.
MIT is currently faced with a staggering number of students who want to study computer science, almost more than either its faculty or facilities can handle. About one third of its undergraduates who have already chosen majors are in fact now enrolled in computer science. Many feel the situation is seriously jeopardizing not only the intellectual balance at MIT but also the diversity of interests within the group of students studying there. The question is much debated. If restrictions have to be made, according to Arthur C. Smith, former faculty chairman, it must be done as part of the admission process. And yet it seems a ludicrous, even if inevitable, situation to turn away from the school those very students whose capabilities are best geared to it and who'd surely be among the first to preserve its reputation in coming years. For the time being, the faculty at MIT has decided to continue to rely on persuasion rather than enrollment limits to cope with the burgeoning student demand to major in computer science.

The history of the nerd goes back way before computers, though it's in this world that he's best visualized and most easily understood. MIT has long been its mecca. In 1956 the first full-scale transistorized computer was designed and built at MIT. And then in 1960 appeared the first commercial interactive computer, Digital's PDP-1, which was developed by MIT's Kenneth Olsen. The machine, comparatively small and elegant, with its matrix of winking lights, eventually led in the late sixties to other interactive machines such as the PDP-10 and the XDS-940. But for the first time in the history of intelligent machines, someone had got away from “the gray-flannel, batch-processed IBM mentality,” as Steven Levy noted in his book *Hackers*, and created something that went along with the “freewheeling, interactive, improvisational, hands-on-über-alles style . . . and designed a computer that would reinforce that kind of behavior.”

At MIT, hackers came into being — students devoted enough to machines, a sort of cybernetic sex, to warrant mention in Krafft-Ebing. All hackers aren't nerds, but most nerds are hackers. A hacker's dream is a nightmare. The more intricate, more complicated, and more challenging the task the better, for like finding the inverse of a matrix it's the *difficulty* that makes it fun.

Common hacks have involved putting cows on roofs, walling up dorm rooms (with or without occupant), and transmogrifying the main dome of the school into a giant breast-cum-nipple. MIT students have welded the Harvard gates shut and reprogrammed the carillon in the Harvard bell tower to play “Rock Around the Clock.”

The most memorable of them all, perhaps, took place during the Harvard-Yale game in 1982. It had all the earmarks of a perfect hack — surprise, publicity, and the ingenious use of technology. Just after a Harvard touchdown in the second quarter, a small black ball popped out of the ground at the forty-six-yard line and grew bigger and bigger; the letters “MIT” appeared on the ball. The ball grew to six feet in diameter — with everybody astonished — and then burst with a bang. As *The Boston Globe* later reported, “MIT won the game.”

THERE IS SOMETHING innocent but underdeveloped in such things that marks its perpetrators, at least to most people, as nerds. It's — forgive the oxymoron — scientific humor,

...d being one of that rare species still found in college for fun uses his mind. Imagination to nerds, paradoxically, often takes the form of reason. (The fiction writers I've taught at MIT, invariably better than their counterparts at Harvard, disprove the criminal libel that imagination is confined solely to students of the humanities.) Reason gives a nerd wit.

What is a nerd, exactly? It's hard to say. The definitions are as many as they're varied. It's a priesthood of sorts, a group of gifted, extraintelligent but often socially inept students — MIT is full of them — who while dazzling math teachers and flunking gym in high school dreamed not of scoring on prom night but of getting to the finals of the national science fair. They are at times painfully different. Even in college, where they make up a harmless but distinct subculture, they come in for it. Some refer to them as Joe Tool. Others, as Lunchmeat or Ace. You'll hear the phrase "nerd alert" often muttered by way of warning whenever one of them comes into sight.

There is a generic nerd. They wear glasses, of course — always a watch — and along with a brutal haircut usually have the familiar jumping-bean gait, bouncing up and down on the balls of their feet as they walk. They're given to odd enthusiasms and abnormal obsessions. As freshmen they always manage to place out of high-level courses others are required to take (calculus, say, or physics) by acing tests, which gives them time to sit around their dorms discussing cyborgs or talking out loud about laser weaponry or trying to figure out the formula for Coca-Cola. But it is with computers that they are most at home. Try to imagine three or four sophomores with damp hands and underdeveloped pectorals sitting around a room and saying things like, "What a bag biter!" or "I bummed the inner loop of the program down to seven microseconds!" or "I was about to gronk out when I got that quadruple bucky working!"

At MIT the nerd is a combination of irreverence, idealism, and genius. He can solve a 5x5x5 Rubik's cube in ten seconds. He's memorized pi to its fiftieth decimal place. He is able to fix telephones, hitch up sound systems, and wire bombs. Vector calculus for him is more fun than sex. He's absorbed by the way things work. He is interested in things such as stimulating the growth of animal hair in a laboratory dish and proving the universe was at one time one trillionth the size of a proton and excavating the permafrost in places like Yuryakh-Yurde, Siberia. It's finally what's so wonderful about nerds — they're *intellectuals*. And what makes them fascinating is essentially what makes them different.

And, oh my, they are different. Growing up, they wore little plastic Donald Duck glasses and loved to watch their mothers iron. They were experts on hamsters. Even in the grammar grades they always knew what *that* was on a camera. Sports were anathema — except perhaps bowling. Most of their time was spent in the cellar, constructing ball ramps and transformers and superconducting focusing coils. In high school they had more solutions than questions, responding in class with long-winded, machinelike answers while everybody coughed and jeered and shouted, "Wierdorama!"

But nerds always attracted the wrong kind of attention. Half the trouble was the way they dressed, which didn't change when they grew up. They're not people who improve this way. Most of them are sartorial goofballs. They tend to wear their pants too high, making them too short, and short-sleeved orlon shirts (always buttoned at the top) with collars



HOW MIT NERDS GET DOWN

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too long and pointy. They're given to wearing loopless trousers, with a foot of belt hanging limp in front. They use plastic pocket holders — nerd packs — filled with an array of pens and pencils. They love belt hangdowns, knives and things, and carry orange backpacks to school, never slung à la mode by one strap but always goonily over both shoulders like an ox harness. It's precisely that lack of panache that characterizes the nerd. A nerd is by definition uncool.

There's an out-of-date — an *old* — quality to nerds, an oddness that makes them seem uncustomary and foreign, despite the fact that they're typically young. They use leather purses for change and in terms of dress always oblige their mothers, who send them things like ugly mackinaws and black galoshes with ladder clips and gweepily out-of-fashion pullover hats with earmuffs, which they actually use! Characteristically, nerds have a chipmunkish look, a sort of feral toothiness. Many look like their fathers, in fact, and often their hairline has begun receding by age ten. Personal vanity doesn't obtain with them, however. They're more interested in things like cult movies and being the first to get the specs out of Heathkit assembly manuals and owning an HP-41CV, the definitive nerd calculator.

They have other characteristics. They're not religious, love puns, wear black shoes, never have a tan, are nocturnal, and tend to be big baseball fans (usually as fanatical statisticians), although the idea of sport, in the sense of pads or helmets or jockstraps — which they find vaguely simian — is as foreign to them as arithmetic is to a pure mathematician. They're equipment freaks and electronics junkies, ill at ease almost everywhere, and notoriously critical. Nerds tend to come from small high schools in such places as Omaha or Bangor. They're Republicans usually, tend to be politically conservative. A certain type of nerd might enroll in AFROTC or argue about defense buildup, but such things seem brainless to most, who'd rather be building ham sets or acoustical stereos or baffle boards and wearing math team T-shirts with formulas like $F = MA$ or Maxwell's Equations written across the front. They also love acronyms, short-wave radios, puzzles, Chinese food, and ice cream.

I find it heartening to report that nerds habitually resist conventional academic procedure and will often sit silently in class, scowling in thought, nervously shaking a foot. Surprisingly, nerds don't like to study — they tend to be challenged by other people's homework — and often fail to get good grades. They're often impatient, restless types who frequently go unchallenged and become bored in the way of, say, Sherlock Holmes or Dr. Jekyll, who turned, respectively, to drugs and idle or pointless research. (They're notorious for quitting school, founding software companies in a

dirty garage somewhere, and becoming millionaires by twenty-two.) They're constantly looking for diversions: Playing D&D. Reading back issues of *The Tech* in the Physics Reading Room. Fixing old computers. Writing chess programs. Or if it's a Friday or Saturday, maybe going to one of the LSC movies, preferably a crazy one, and sitting alone.

Nerds are uncomfortable in social situations. When they do talk, their voices tend to be too loud or of some weird aspect (honking applies), and they're usually oblivious to the volume. They're inclined to be nasal and have robotically precise diction. They laugh like hyenas and make sarcastic remarks down the nose with a sort of know-it-all snicker. They have a real passion for debunking. It boosts their egos, for example, to laugh at improbable sci-fi, the limits of the possible, popular improbabilities. The thing is, nerds often can't see another person's feelings.

Emotionally underadvantaged, they're often immature — even silly — with an unsettling, sometimes sophomoric sense of humor. When arriving at a gate before passing through, for instance, they usually swing on it first. I think they are among the most complicated, least understood mortals on earth nevertheless. Theirs is the kind of outlandishness that provokes abuse. They're often considered effeminate; in fact, they're gentle, even if arrogant. It's strange: in high school those people with brains are often thought of as queer, arrogant people, as never kind. Behind their singlemindedness is a warmth, even if it is the collective realization of the Hacker Ethic. Nerds are capable of that odd staginess found in people used to harassment, predominantly by people who see them as quintessential technocreeps.

Total melvins. Eugenics. Double-baggers. Dorks and dipshits. It's not what they want to be, but rather the way that they are thought of — what anti-intellectual philistines often insist they *are*. Most of us are threatened by nerds. Their own feelings of ambivalence are often reflected in their manner. At one time they couldn't be more helpful to you, being solicitous to a fault. At another time they're cold and impersonal, either snapping at you in a way that betrays a merciless egotism or not saying a word, as if letting you know that the world's sadly flawed and you're no exception.

I've taught them and felt both extremes. I've been to their rooms, and you can feel the incongruity there more than anywhere. They're either a mess — it's never halfway — or maniacally neat. A mobile or two. An Escher poster. Magnetic tape spools. Stacks of computer magazines. A shelf of science fiction novels: *Dune*, *Ringworld*, by Larry Niven, Piers Anthony's *Bio of A Space Tyrant*, Rudy Rucker's *Spacetime Donuts*, Stephen Donaldson's *Chronicles of Thomas Covenant*. It's always dark, with a single bed — slang for sleeping at MIT (a computer term, of course) is "garbage collecting" — and not a sign of booze or women, in spite of the perfunctory sticker on the mirror reading "Mathematicians do it discretely and continuously."

Stereo components are everywhere. And nerds have great record collections — New Age music, classical, and out-of-the-way things such as original pressings, in mint condition, of Yogi Yorgesson's "Who Did the Halibut on the Poop Deck?" and Napoleon XIV's "Split Level Head" and Cathy Weeks's "New Jersey Blues" and Little Roger and the Goosebumps's "Fudd On The Hill" and Cootie Williams's "Juicehead Baby." Last but not least, of course, is the computer.

THE COMPUTER that really matters. More than anything. In many cases, more than family or friends. It may stand for many as a better, more constant friend. It's the predictability and controllability of computer systems, as opposed to the hopelessly random problems in a human relationship, that makes hacking particularly attractive to many. Computers are to nerds what paprika is to Hungarians. Most nerds are familiar with everything from popular PCs to large multiuser access systems. But whether it's an IBM XT, a "Trash 80" — a joke for the superannuated Radio Shack TRS-80 — or Kaypro II, there they sit, diddling data and "bitblting" the machine into the night, hacking away. Commonly, hackers go logging on late at night. Sunlight bores them; the cathode ray light of the video display terminal is their inspiration.

Project Athena, a 1982 initiative at MIT to enhance undergraduate education through the use of personal computers (subsidized by Digital and IBM), installed a campuswide network of about 2,600 work stations in labs, frats, dorms, and libraries. Most hackers, however, kept to their owlish schedules. The modem fees are lower at night. And there is still heavy demand for computers during the day, too much "wedgitude," in hackspeak. It's cozier, working into the wee hours, eyes like glassene, tap, tap, tapping on the chiclets.

Engrossed for hours, nerds rarely want to leave, or move — which explains their passion for junk food and pizza and Chinese takeout, as well as their characteristically bad complexions. (Anything that's *delivered* interests them.) And then it's zorch time. Talk mode. Someone might lean back, yawn, and ask, "Do you want to PROC eat?" Or they may simply communicate by machine. The exchange may go like this:

"Foodp?"

"Snarf, snarf. Duckp?"

"T!"

Translated, this means roughly:

"What about dinner?"

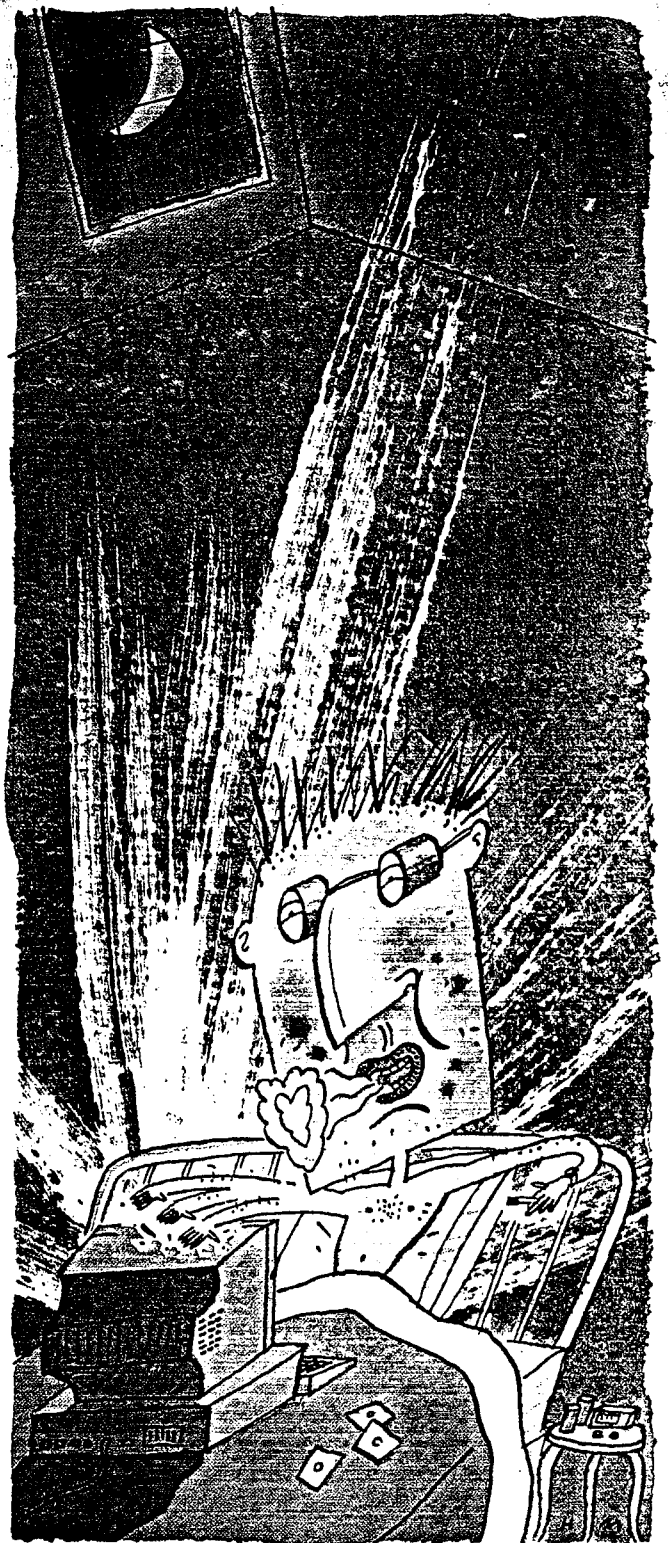
"I'm hungry. Peking Duck [a favorite restaurant in Central Square]?"

"Definitely."

Computer, or assembly, language fascinates nerds. They are constantly making reference to PC commands, speaking like machines in languages such as Fortran or Pascal, and using a kind of goospeak that includes various words and meta-expressions such as pixil and edit-mode and zorch, fudge factor, mumblage, NXM, and glitch and glork. Programs slurp (that is, record memory) and crunch (work it out). Measurements are made in matrix notations and bytes and Hz's. You often hear the letter *T* spoken instead of yes — these are LISP terms — and "nil" for no, which is the foo and bar of it, if you see what I mean. The alpha and omega? Exactly.

Some scientists believe there is a fifty percent chance that by the year 2000 intelligent machines will be able to cope with all mental activities as well as human beings do. Expert systems, computer programs that give advice like a human specialist, are already pinpointing mineral deposits and diagnosing diseases. But finally, artificial intelligence is about something much more interesting: intelligence. Mind. The nature of thought. The computer will teach us about ourselves as it sweeps us into the twenty-first century, that century already inhabited by the nerds of MIT.

Alexander Theroux is the author of the forthcoming novel *An Adultery*.



WHY THE MIT NERD NEVER GETS THE GIRL

"It's the computer that really matters. More than anything. More than family or friends. It stands for a better, more constant friend. The predictability and controllability of computer systems, as opposed to the hopelessly random problems in a human relationship, make hacking particularly attractive."