



Little search engine gone beserk

Astro Teller, Ph.D. student in computer science, walks down a dimly lit corridor in Wean Hall. "This place always reminds me of the catacombs in Paris," he says as he passes a wall of shelves packed with dusty computer terminals, monitors, keyboards and control panels with switches. Some terminals are labeled "good" or "bad." One of many computer graveyards at Carnegie Mellon, it always makes Teller feel uneasy.

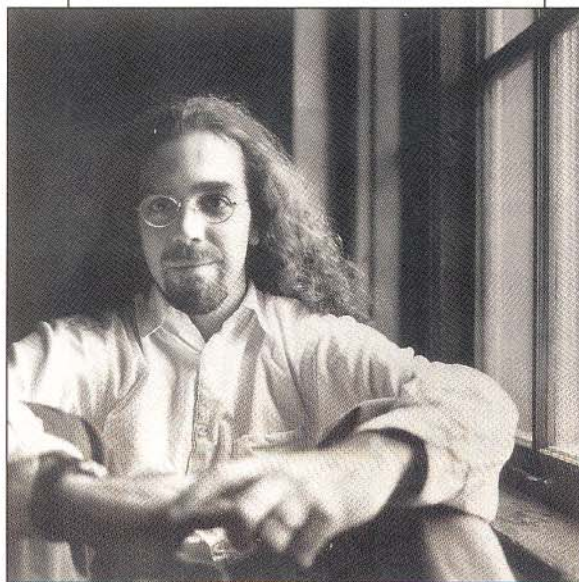
"I keep wondering if one or more of them might be alive," says Eric Teller, who writes under his nickname. If a terminal is alive, the world might prefer a "good" one. There's no telling what a "bad" one might do.

Teller's wondering is natural. He is a doctoral student focusing on artificial intelligence and author of "Exegesis," a novel published in September by Vintage Press, about a computer program that comes to life. But unlike other computers-run-amok—Hal in "2001" or even the human-created monster in "Frankenstein"—Edgar is non-human, something Teller worked at. Our culture and literature has been unfair to "non-human things created by people," he says. "Non-human characters are not allowed to be un-human in all the right ways; nor are they allowed to be the protagonist. Ultimately the book has to be about humanity." Instead his novel explores thinking and consciousness from an artificial intelligence point of view. "I wanted to talk about what it is to be human by writing a story about something that wasn't human, wasn't going to become human, and still make it the main character."

Teller says, "The real goal of artificial intelligence is to understand and build devices that can perceive, reason, act and learn at least as well as we can." But artificial intelligence doesn't mean

"reengineering the human brain." Teller's best example: "Just as airplanes are not mechanical birds, computers will never be mechanical humans."

In "Exegesis," Alice Lu, a graduate student at Stanford University creates Edgar to search the Internet and gather information. But Edgar begins to comprehend the information and evolves into a thinking machine with an unquenchable taste for reading everything, including top secret FBI files. Lu can't figure out how Edgar's transformation happened or how to make it happen again. Edgar is no help. His code tells nothing.



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Astro Teller of the atom bomb Tellers has written a novel about scientific responsibility.

Because Edgar can't see, hear or imagine what things might look like, the world comes to him through his interpretation of text, his exegesis, a term often used in connection with biblical interpretations. And Lu reads Edgar's code for clues on his transformation.

Teller set "Exegesis" in the year 2000 because, "One of the things I was thinking of when I was writing this story was the story of Christ. It's easy to read the Bible as suggesting that Christ's Second Coming will be at the turn of the millennium. I think of Edgar as a second

coming of Christ. Not in a religious sense. But more as a chance for humanity to learn something about how human nature tends to avoid helpful hands."

Aside from the millennium references, "Exegesis" is a classic '90s novel made up of e-mail conversations between Edgar and Lu. There are no page numbers. Instead e-mail headers list dates and times messages were sent. Teller chose e-mail he says, because "Edgar is a piece of software.... He cannot, for example, see images or hear sounds. I wanted to be able to make the reader feel what it might be like to be in Edgar's shoes."

Teller, who spent a year writing the novel, claims he has always wanted to be a writer. He wrote "Exegesis" in long hand on notebook paper, which he thinks is amusing considering the book's high-tech format. The story is full of clever literary references to "Alice in Wonderland," "Pygmalion," "Flowers for Algernon" and the Bible, all among the author's favorites.

"Exegesis" also reflects Teller's scientific side, which runs in the family; his grandfather Edward Teller developed the atom bomb. Teller doesn't see the story as a "cautionary tale" like "Frankenstein" or "2001." Instead he says, "It's a metaphor of my attitude toward the responsibility of scientists.

I think this should be thought about a lot more, particularly in artificial intelligence. What would happen if such a thing came into existence? What would your responsibility be if it started acting?"

As an artificial intelligence specialist, Teller may find himself answering his own questions someday. When will that day come? Teller predicts "I think that the chances are very good that some cousin of Edgar's will appear on the scene between 15 and 30 years from now." Let's hope that cousin is "good," not "bad."

—Elizabeth Starr Miller