

Astro Teller brings Frankenstein into computer age

By Bob Minzesheimer
USA TODAY

PITTSBURGH — His father's father developed the hydrogen bomb. His mother's father won a Nobel Prize for economics.

At 26, Astro Teller is gaining attention, not for his family tree, but for his work in artificial intelligence, which he defines as "the science of how to get machines to do the things they do in the movies," and for

"People tell stories about the nonhuman or the superhuman to learn what it means to be human."

— Astro Teller,
author of *Exegesis*



By Chris Kasabach

Astro Teller: The 26-year-old Carnegie-Mellon doctoral candidate, the grandson of H-bomb inventor Edward Teller, explores the concept of artificial intelligence in his novel set in cyberspace, 'Exegesis.'

Tarantino. Someday, he'd like to make a movie, "a medium I haven't played with yet."

But that's "totally shelved for now" while Teller finishes his doctorate in artificial intelligence at Carnegie-Mellon University and publishes articles like "The Discovery of Al-

gorithms for Automatic Database Retrieval." His Web site, <http://www.cs.cmu.edu/~astro>, includes book and movie recommendations.

Exegesis (pronounced ek-'suh-JEE-'sis) means the careful examination of a text. Teller says it's what Edgar

(Eager Discovery Gather and Retrieval) "has to go through. His entire experience with the world is exegesis. He takes texts and interprets them. It's all he gets."

Edgar can't see, smell, taste or feel anything. Many science fiction writers, Teller

Excerpt

Date: Mon, 31 Jan 2000 04:46:22 (PST)
From: edgar@cyprus.stanford.edu
To: Alice@cs.stanford.edu
Subject: I have eyes and I can not see.

Alice,
I can neither see nor hear. You are correct that seeing and hearing are not like reading.

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504C5E9A7FA3B5BEC9CCC9CCD1C9CCB5A397735E4C
4C50667399B5C9C9C9DDD1DDCCDDC9CCB599889A50
555E7397B5C9CCDDD1DDD1DDCCCCCAA977F5E
5E667F99BEC9D1D1DDD1DDDDC9DDC9CCBEB5998A66
669A88B5C9D1D1D1DDD1DDD1DDCCDDC9CCB5AA8A73
667FA3BEC9D1DDDD1DDCCD1DDC9D1CC9BEB5997F
...
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This picture looks like a lamb to you. I can not find in the picture any features of a lamb. Perhaps I do not understand how to see fleece and hooves and size and color. Which number is white? Which number is pink? Which number is fleece?

I do not have the key. I can not decipher images or sounds.

Edgar.

says, mistakenly assume that disembodied computers, without sensory perception, "think about the world the way you do, only generally they want to take it over or kill you or something."

The title also is meant to encourage close readings. Students of mythology may notice that part of Edgar's e-mail address, edgar@cyprus, is the island where Pygmalion was king. And Edgar's lone convert at the National Security Agency, policing a computer security breach, is named Thomas, as in the doubting apostle Thomas.

Exegesis sounds like "Exit Jesus," and Teller says it can be read as an allegory for Christ's second coming. He

even calls the story of Jesus and Mary (he finds them equally interesting) a sort of an artificial intelligence tale if you consider artificial intelligence as "creating things which are like us in some respects but not like us in other. ... People tell stories about the nonhuman or the superhuman to learn what it means to be human."

Alice, a student at Stanford, where Teller earned bachelor's and master's degrees in computer science, fears she won't get credit for the creation she doesn't understand and can't control. She e-mails Edgar, "I'd sell my soul ... if there were buyers."

Edgar replies: "Do you believe in a god? Do you have a soul? How can you sell a soul?"

Can I buy a soul? What is the market price for a soul? Is your soul in mint condition?"

Teller is "staunchly agnostic" but "fascinated by religion" and "spiritual, whatever that means."

His mother, Chantal De Soto, a hypotherapist, is a "recovering Catholic." His father, Paul, a philosopher of quantum mechanics ("about as esoteric as you can get") is "culturally and ethnically 100% Jewish but religiously not." They named him Eric; he adopted Astro after soccer teammates joked about his AstroTurf-like buzzcut. His hair is now shoulder length.

His maternal grandfather, Gerard Debreu, won the Nobel Prize for economics in 1983, "which meant I got to go to a cool party in Sweden."

His paternal grandfather, Edward Teller, a Jewish German refugee known as the father of the H-bomb, is "severely misunderstood," Teller says, "by people who hate bombs so they hate him."

He credits Edward, who's 98, for guiding him on an issue raised by the novel: scientists' responsibility for the uses of their inventions.

"To say a scientist is not at all responsible is wrong. But to say that someone who invents a piece of knowledge or technology is responsible for all future uses is ridiculous. It doesn't have to be that binary.

"I think of it as a parent-child relationship," with the parent's responsibility dwindling as the child grows up.

In science, he says, "your responsibility is to educate the world about what this thing is and how it can be interacted with responsibly.

"And, in the end, Alice fails at that."