Turing Test Round One
Loebner Prize Competition: November 8

The first round of the classic Turing Test of machine intelligence will be held November 8, 1991, at The Computer Museum. New York philanthropist Dr. Hugh Loebner, President of Crown Industries, Inc., has offered a $100,000 prize for the first machine to pass the test. The historic contest is being administered by the Cambridge (MA) Center for Behavioral Studies and the Museum.

"...any computer that actually passes the unrestricted Turing Test will be, in every theoretically interesting sense, a thinking thing." [Daniel C. Dennett]

In 1950, the brilliant British mathematician Alan Turing issued the ultimate challenge to computer science. He proposed an experiment to determine if a machine could think. His test requires a computer to emulate human behavior (via a computer terminal) so well that it fools human judges into thinking its responses are from a person.

While the subject has been debated for decades, artificial intelligence experts will get their first shot at a Turing Test real-time this fall at the Museum. Instead of being open-ended—a challenge that no computer can approach at this time—each "conversation" will be limited to a particular subject to give the computer a better chance. Using a format akin to a public chess match, the judges will hold conversations on several computer terminals in the Museum's auditorium. The responses of each terminal will be controlled either by "human confederates" or computers. The audience will be able to see the conversations on large screens near each terminal.

Afterwards, the tally of scores comparing human and computer performances will be announced. The programmer whose computer gets the highest score will receive a $1,500 award and a bronze medal. The cash award will be increased each year. In some years, open-ended Turing Tests will be held. When a computer system passes an open-ended test, at least $100,000 will be awarded and the prize abolished.

The contest has provoked fascinating questions. "Should a winning machine get the prize money itself?" asked AI writer Douglas Hofstadter. A panel of distinguished computer scientists, philosophers, and psychologists is grappling with such questions as well as overseeing planning.

Over 130 individuals and institutions around the world have requested application materials. The finalists will be chosen by September 15, 1991. "We can't reveal who they are or where they're from because it would jeopardize the judging process," says Dr. Robert Epstein, Director Emeritus, Cambridge Center for Behavioral Studies, who is coordinating planning for the event.
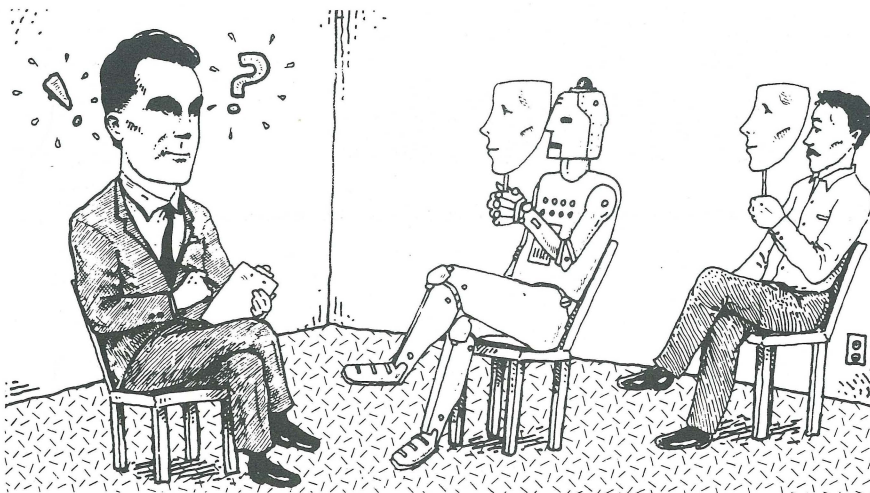
Illustration by Joseph Deken

Turing creates a standard test to answer: Can Machines Think?

Other committee members include: Dr. Daniel Dennett, Chair, Distinguished Professor of Arts and Sciences and Director for Cognitive Studies, Tufts University; Dr. Harry Lewis, Gordon McKay Professor of Computer Science, Harvard University; Dr. H. McIlvaine Parsons, Senior Research Scientist, HumRRO; Dr. W.V. Quine, Edgar Pierce Professor of Philosophy Emeritus, Harvard University; Dr. Joseph Weizenbaum, Professor of Computer Science Emeritus, MIT. Dr. Loebner and Dr. Allen Newell, U.A. and Helen Whitaker University Professor of Computer Science at Carnegie-Mellon University, are serving as advisors, along with Dr. I. B. Cohen, Victor S. Thomas Professor of the History of Science Emeritus, Harvard University. Dr. Cohen was Committee Chair during the first year of planning.

The Museum will create an interactive exhibit based on conversations of the winning computer program. The Loebner Prize has already attracted the attention of CBS News, PBS, and *The Wall Street Journal*, which said, "After the first running of the Loebner classic this fall, the AI game will never be the same."

Computers Fool Humans

In Restricted Turing Test

Computers made history at the Museum on November 8, 1991, when Joseph Weintraub, president of Thinking Software, Inc., Woodside, NY, won the first annual Loebner Prize Competition. The contest was a restricted version of the classic Turing Test of machine intelligence.

The test is based on a challenge to computer science issued by the late British mathematician Alan Turing in 1950—an experiment to determine if a machine could think. His test required a computer to emulate human behavior (via a computer terminal) so well that it would fool human judges into thinking its responses were human.

On November 8, a modified version of Weintraub's computer program, PC Therapist, scored highest of all the programs in human-like qualities. Programmed to make whimsical conversation, it fooled five of 10 judges into thinking it was human. Judges held conversations on eight computer terminals, trying to determine "who" was controlling the responses—two human beings hidden in the Museum or six programs running on computers in Alabama, California, Connecticut, New York, and Pennsylvania. The typed interplay was projected on large screens for the audience, while *Scientific American* columnist A. K. Dewdney offered commentary.

A throng of reporters and film crews from the United States, Great Britain and Germany covered the historic event, with *New York Times* technology writer John Markoff, the AP and others sneaking off to file their copy on deadline. The contest made the front page of the next day's *New York Times*, *Boston Globe* and *San Jose Mercury News*, while headlines appeared as far away as Italy, the USSR and the Middle East.

Weintraub, 48, received a $1500 award and a bronze medal. This year's contest was administered by the Cambridge (Mass.) Center for Behavioral Studies and hosted by The Computer Museum with funding from the
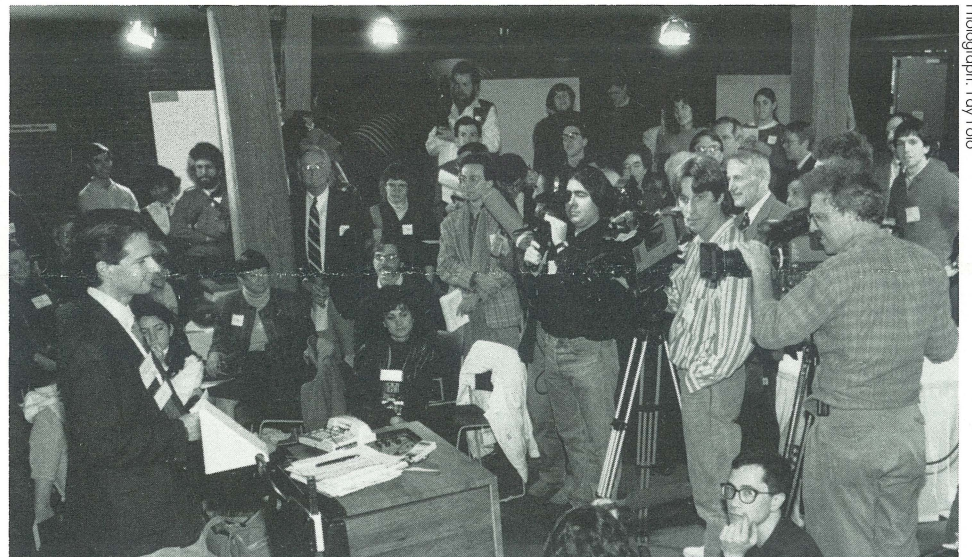
Almost 300 people—including 70 representatives of 35 media outlets from around the world—watched Robert Epstein announce the winner of the first annual Loebner Prize Competition.

Photograph: Fay Foto

National Science Foundation and the Alfred P. Sloan Foundation. A panel of distinguished computer scientists, philosophers, and psychologists oversaw planning. The Loebner Prize Competition was established in 1990, when New York philanthropist Dr. Hugh Loebner, President of Crown Industries Inc., offered a $100,000 prize for the first machine to pass the test. Instead of being open-ended—the way Turing intended—this first round gave the computer a better chance by limiting "conversations" to topics such as romantic relationships, Shakespeare's plays and Burgundy wines. Judges and confederates were chosen not to have extensive computer expertise. In fact, four of the six computer programs fooled at least one judge into thinking they were human, and two judges thought one human confederate was a computer!

At present, it is unlikely that any computer could pass an open-ended Turing Test. As Dr. Daniel Dennett, Tufts University Distinguished Professor of Arts and Sciences and Chair of the Loebner Prize Committee, said in his opening remarks, "Today's contest is still at the paper airplane stage. But you have to start somewhere." If a computer passes the open-ended test, at least $100,000 will be awarded, and the prize abolished. "When a computer does that, it will be an extraordinary milestone," noted Dr. Robert Epstein, Director Emeritus, Cambridge Center for Behavioral Studies. The Museum plans to create an interactive exhibit for its Smart Machines Gallery based on conversations of the winning program and those of a human confederate.

Turing Test *(continued fom P. 1)*

Joseph Weintraub, 48, winner of the first annual Loebner Prize Competition, designs and sells artificial intelligence, expert systems and natural languages software. His entry was a modified version of the PC Therapist, a program it took him over three years to write. It uses five megabytes of memory and a knowledgebase of thousands of amusing quotations and rules for conversation, and runs on any IBM compatible. For the contest, he limited the topic to "whimsical conversation." He adds, "If only people would engage in whimsical conversation, the world would be a more peaceful place."

Excerpt from winning conversation with PC Therapist Program:

Judge: I am not sure what is whimsical?

Terminal: Do you think it's absolutely normal to be not sure what is whimsical? Please make me laugh. Is it because you are not sure what is whimsical that you came to me?

Judge: Probably.

Terminal: Probably no invention came more easily to man than heaven. Ipso facto nonsensico.. Please go on.

Judge: I am in the clouds now.