

# A Computer? Funny, You Don't Sound Like One

## The Offspring of Hal 9000 Are on the Phone, and This Time, They're Just Trying to Help

By IAN AUSTEN

**E**VERY day, Tom Glynn has conversations with hundreds of thousands of people. He chats about investments and stock trades with customers of the brokerage firm CSFBdirect. To owners of broken-down bulldozers calling the equipment supplier Caterpillar looking for help, he is unfailingly polite:

"Sorry, I didn't understand. Please say 'locate dealer' or 'warranty look-up.'" And Mr. Glynn invites callers to United Airlines' flight information line to barge in at any time: "Here's a hint. If you know the

answer to any question I ask, please interrupt me."

Of course, Mr. Glynn does not have the time to carry on all those conversations personally. The callers are talking not to him but to computers that hold digital copies of his voice.

Mr. Glynn, a 36-year-old voice actor from Boston, is one of a small number of performers who provide the voices for automated-response telephone systems that are slowly replacing human customer service representatives with banks of computers.

These systems are a direct result of the rising quality of voice-recognition technol-

ogy. Computers can now better understand what someone on a telephone may be saying. And increasingly, computers are answering back.

An expert in the field of computerized voice systems is Christopher Kotelly, creative director of Design Interface for Boston-based SpeechWorks, one of several companies that produce sophisticated voice recognition software. The company has developed systems for about 250 companies including United Airlines, America Online, MapQuest and Federal Express.

Wearing a collarless black shirt under a black suit, Mr. Kotelly looks more like a theater director than a computer nerd. And

Mr. Kotelly, who prefers to be called Blade, unquestionably sounds like a Broadway impresario when he describes spending hours with his "talent," who try to approach customers in such a way as to "paint a picture in their heads."

Although talking computers were little more than a gleam in engineers' eyes when Mr. Kotelly was born 29 years ago, he relates his life story almost as if it were preordained that he should work on creating them. The son of a computer science professor at the Massachusetts Institute of Technology and a ballet instructor, Mr. Kotelly recalls running up a \$500 telephone

### INSIDE

Continued From Page 1

will with long-distance calls and calling out-of-town computer bulletin boards as a teenager.

"From my parents, I always had this dualism of art and science as I grew up," he said. That extended into college at Tufts University, where he studied human factors in a curriculum that mixed psychology and engineering. He was also active in directing and composing music for amateur theater at Tufts. After graduation, Mr. Kotelly went to Wildfire Communications, a company that makes telephone-based personal digital assistant systems based on voice recognition technology. Then, just over three years ago, he moved to SpeechWorks.

His job is to blend computer technology with research from psychology, sociology and linguistics and then throw in a few show business tricks to create the illusion that another human being — not a machine — is offering the flight times, driving directions or shipping information. Mr. Kotelly said that he prefers to call his creations "automated personalities."

"We're not necessarily trying to mimic human conversation," he said. "This is a tool, like a wrench. Like any tool, it helps you get a task accomplished. This isn't meant to be a psychiatrist."

Automated voice systems may not be human exactly, but it helps if they sound as if they are. In a recent experiment, Clifford Nass, a professor in the Communications Department of Stanford University, tested responses to a computerized voice synthesizer that offered different positive comments about a book in five different voices. When he interviewed the subjects after the test, most of them reported that several "people" recommended the book. As Dr. Nass has found in other experiments, the listeners treated each of the computer voices as individual humans beings rather than five separate interfaces generated by a single computer.

"They thought there were more people," he said. "These are things we can't extinguish. Our brains are built for speech."

Mr. Kotelly and other designers rely heavily on research like Dr. Nass's. To design the most natural, human-sounding computer system, Mr. Kotelly and his team start by scripting as many full prompts and phrases as possible. (In the project for United Airlines, that list ran to about 2,500 entries.) Each of those tiny scripts is finely tuned to include



Ian Austen for The New York Times

Christopher Kotelly, at the screen, works with computerized voices.

even words and expressions that to the listener's ears should sound off the cuff.

"The word 'oh' is great," Mr. Kotelly said. "You can have a long statement and at the end say, 'Oh, if you ever need help, just ask for it.' It really brings the user's attention back."

To keep from irritating users with repetition, multiple variations of common prompts are written. And of course, for some systems, it's impossible to make advance recordings. That is particularly true of systems like the one SpeechWorks developed for MapQuest, a Web-based service. MapQuest uses software that converts text to speech to deliver driving directions. For those situations, Mr. Kotelly records a long list of sounds and words that the computer can later splice together into sentences, a process known as concatenation. It takes 1,200 recordings of number combinations — with variations of sequence and tone — just to allow a computer to announce a 10-digit phone number.

After the scripts are written, Mr. Kotelly must find someone like Mr. Glynn to execute them. He usually rejects actors with booming voices who specialize in voice-over narrations for television commercials. In the comparative intimacy of a telephone conversation, he said, a booming voice may be repellent. And busi-

nesses that operate in regions with distinct accents have found that using them can sometimes be difficult. "People in the region that have very heavy southern accents may want their bank to sound just like Dan Rather when it's taking care of their money."

And even for companies that can afford them, Mr. Kotelly steers clients away from famous actors. Verizon, for example, uses James Earl

### As more machines talk, there is a market for voices that can smile and reassure.

Jones's distinctive voice for some systems, but Mr. Kotelly said that Mr. Jones's voice would not be suitable for long prompts. "It would probably be pretty difficult to speak to him through a long conversation because he would always sound very intense."

And then there is the question of the speaker's sex, an issue that became especially tricky during the development of a road-directions voice site that Mr. Kotelly undertook for MapQuest last year. "A lot of the men at MapQuest claimed that they didn't want directions in a woman's

voice," said Steven Chambers, vice president for marketing at SpeechWorks. Others at MapQuest adamantly favored a female voice.

The sex war was resolved by making two versions of the system. Focus groups showed a slight preference for the woman's voice. "I don't think we realized what an ordeal this decision was going to be," said Kathy Kinney, director of business development at MapQuest. (MapQuest's voice site is currently not operating. A spokeswoman said that it will be incorporated into AOL by Phone, a voice portal operated by America Online, which also owns MapQuest.)

One of Mr. Kotelly's favorite performers is Mr. Glynn, who has worked on automated voice systems for about two and a half years. To show Mr. Glynn's versatility, Mr. Kotelly played some recordings through his laptop, starting with a demonstration system for a hotel. As Mr. Glynn's voice boasted that "tour buses for the famous Paul Revere carriage tour board outside our front door," Mr. Kotelly remembered coaching him into speaking with a bright, car salesman style. "He's got a smile in his voice," he said.

By contrast, it is a much more reserved Mr. Glynn on a customer service system for the heavy machinery parts division of Caterpillar. "He's very cool, so you don't feel pressured," Mr. Kotelly said. "He gives you the sense that he's smoking a cigarette, waiting for you to take your time."

Of course, just as SpeechWorks systems have dislodged human telephone operators, computers may one day replace Mr. Kotelly, his stable of voice actors and the rest of the staff of psychologists, linguists and other specialists. "The holy grail in this industry is to take their brain trust, their education, their artistic background and make it available via automation," Mr. Chambers said. "It would save people a ton of money and make these things easier and faster to do."

In the meantime, Mr. Kotelly conceded that he is one director who does read reviews of his work. A particular favorite, he said, was an e-mail message from a United Airlines customer who said she found its system so helpful it made her want to invite its voice out to dinner.

But even rave reviews are no match for the actual experience of hearing his work in action.

"I tell you, when I call United Airlines, I love it," Mr. Kotelly said. "I know I worked on it a long time. But every time I call up and it plays a prompt I haven't heard for a year, I kind of get a big thrill."