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Lost in translation? New technology comes to the rescue

By RAMESH SANTANAM, Associated Press Writer, The Associated Press 10/28/2005

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Imagine this: You want to say something quietly in Spanish to a co-worker during a meeting, but you don't speak Spanish. So you simply mouth the words in English, without uttering a sound, and they immediately pop up in Spanish on your colleague's computer screen.

Researchers acknowledge it sounds far-fetched, but they're working toward making it a reality. Their goal is to tear down language barriers and improve human speech translation by using computers.

On Thursday, the International Center for Advanced Communication Technologies, run jointly by Carnegie Mellon University in Pittsburgh and the University of Karlsruhe in Germany, unveiled on-the-fly computerized human speech translation. The center's director, Alexander Waibel, delivered a lecture that was simultaneously translated from English to German and Spanish.

"We're living in an interesting time," he said. "We're increasingly globalizing. ... We have multiple cultural groups that speak different languages. We want everyone working together but to maintain our individuality."

Waibel showed new ways of translating speeches beyond traditional headsets.

Researchers, for example, showed off goggles that delivered translations on a small screen and an array of small ultrasound speakers that delivered a narrow beam of audio in a foreign language to one person while others heard the speech in its original language.

Doctoral student Stan Jou demonstrated a device Waibel described as sounding like science fiction. Jou mouthed words in Mandarin and 11 electrodes on his face and throat sensed what he said by the movement of his facial muscles and promptly translated it into English and Spanish.

He and Waibel envision a day when people have implants in their faces and throats to be able to essentially speak foreign languages.

Current speech-to-speech translators can be used in limited situations, such as making hotel reservations.

"If I go to Beijing, I can check in at the Hilton without any problem," said Carnegie Mellon research scientist Stephan Vogel, demonstrating a personal digital assistant with a translator program.

He spoke English into the PDA that translated his words into, in this case, Thai.

While Waibel believes PDAs with translator programs could be sold commercially _ right now, they're used by humanitarian relief workers and for military purposes _ within a year or so, the more complex speech-to-speech translator will take longer.

The current device isn't perfect.

During Waibel's lecture, the translator erred sometimes transcribing his speech in English. The word "might" showed up as "mate," "some" as "sum" and "patent" as "patten."

"We have to improve performance," Waibel said. "It's very, very important for a system to tell you when it's wrong. Computers are awful at that."

But he remains hopeful.

"We don't want to be separated by language anymore," he said. "This vision of the future might be a reality."

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International Center for Advanced Communication Technologies:
http://www.is.cs.cmu.edu/

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