INFORMATION AGE / WILLIAM M. BULKELEY

Translation Software Falls Short of Fluency

The advertisements are alluring: "A completely automatic document translation program." "With this revolutionary software program, you simply input your English text." "Translating text is fast and easy."

The reality is that PC translators may get the message across, but if writers knew how bad they sounded, they might want to pay extra for human translators.

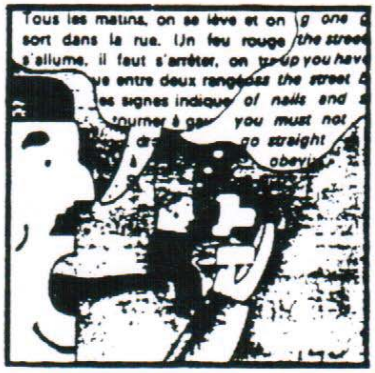
Of course, many people who buy these programs don't know whether they're getting good translations. After all, who buys an English-French translation program if they already know how to write French? But judging by the ability of programs to translate other languages into English, PC translation has a long way to go.

Gaffes Galore

Take a warning about hypothermia put out by the city of Boston to elderly English and Spanish residents. In English, the warning reads, "Hypothermia means low body temperature. It is caused by exposure to cold." But the bestselling $100 Language Assistant Series from MicroTac Software Inc., San Diego, Calif., translates the Spanish version into this English sentence: "Hypothermia means to say temperature gets off the body and is caused by the exposition to the cold." A competitor, $149 Foreign Correspondent from Toltran Ltd., Lake Zurich, Ill., translates the sentence: "Hypothermia wants to tell temperature lowered of the body and is caused by the (exposicion) to the fry."

Still, folks who need translations figure PC-based translation software is a blessing. "Given the alternatives, which are none, it helps," says Richard Sabin, an importer of remote-control helicopters in Niagara Falls, N.Y. He uses EZ Japanese Writer, a $1,200 program from EJ Bilingual Inc., Torrance, Calif., to send letters to Japanese suppliers, even though he has studied enough to write some Japanese. "When I got the software, I was a virgin at Japanese. The software has helped me. I use it as a starting point."

Just a few years ago, that wouldn't have been possible. All language translation required $10,000 software programs running on million-dollar mainframes or powerful minicomputers, not on PCs. Now, users have a choice of some dozen PC-based programs costing from $100 to $2,000 that cover languages ranging from Russian to Danish.



John Segal

'Accurate Translations'

Jaime Carbonell, director of the Center for Machine Translation at Carnegie-Mellon University in Pittsburgh, says researchers are currently close to producing "accurate [computer] translations that don't require" rewriting by humans – at least in areas where the subject matter is limited. In the largest such project, he says, Carnegie-Mellon researchers are working with Caterpillar Inc. to translate the thousands of pages of instructional, safety and maintenance manuals that go with every bulldozer into 11 foreign languages. He adds: "French should be operational by year end."

But for broader subject matter, polishing is mandatory. "Machine translation is useful for a first draft," says Glenn Akers, president of Language Engineering Corp., Belmont, Mass., which makes a $2,000 English-to-Japanese translator that runs on the Apple Macintosh computer. "It's bad for the industry if people are advertising a system that will give you an excellent translation. In any sense that a layman would understand, that's just not possible," he says.

Language is a daunting task for computers because of its ambiguity. One word may have several different meanings that are translated differently in foreign languages. For example, to help the computers translate Caterpillar manuals, researchers had to teach them how to differentiate "gas" as gasoline from natural gas. Many words can be both verb and noun, like nurse or truck, making it tough to even parse a sentence. In Japanese, there aren't any spaces between characters, making it hard for the computer to determine where a word ends.

Some of these difficulties have been apparent since the 1950s, when translation was one of the first tasks envisioned for infant computers. U.S. intelligence agencies wanted to put big bilingual dictionaries of Russian and English on computers and have them spit out translations. But according to linguistics lore, idioms like "the spirit is willing but the flesh is weak" came out as "the vodka is strong but the meat is rotten." In 1968, a government-sponsored report decreed computer translation impossible, and funding dried up. Nevertheless, a few small companies kept working at the task.

Renewed Government Interest

Steady advances at universities and entrepreneurial companies have gotten the government interested again. The Defense Advanced Research Projects Agency has started funding some research. U.S. multinationals and translation bureaus are using computers to make a first pass at translation and then using human translators to clear up any problems. Systran Translation Systems Ltd., La Jolla, Calif., one of the industry pioneers whose software still runs on mainframe computers, says that a translator can polish a page of machine-translated technical material in less than 20 minutes, compared with 45 minutes for translating from scratch.

The ultimate dream for researchers is a translating telephone that would turn a caller's words into a listener's language. Researchers at Carnegie-Mellon and Japanese and German universities demonstrated last week a system called Janus for registering at a conference. A speaker can ask a question about the process for registering, and the computer will translate it so the conference official can answer.

Alexander Waibel, senior research scientist at Carnegie-Mellon, says, "Even routine things are very demanding, because people have many ways of saying the same thing." He hopes to apply the technique to other specialized areas, such as travel and scheduling appointments. "We certainly won't be handling international peace talks or poetry discussions," he says.