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The Universal Translator Telephone

Today, you can use your smartphone or computer to translate words, phrases, and paragraphs from one language into another. At the press of a few buttons, full web pages can be translated. You can even have your computer read to you with the simulated passion of a dramatic actor.

The next big step in communication technology will probably be the universal translator telephone. The basic science fiction concept of a universal translator is simple. You speak into your smartphone in your native language, and your words are changed on the fly so they exit the speaker on the other end of the wireless phone call in the language that your listener understands. (See photos.)

Of course to make this happen, your spoken words will need to be processed by a powerful computer. Having the universal translator computer enter into your call converts your phone call into a three-way conversation.

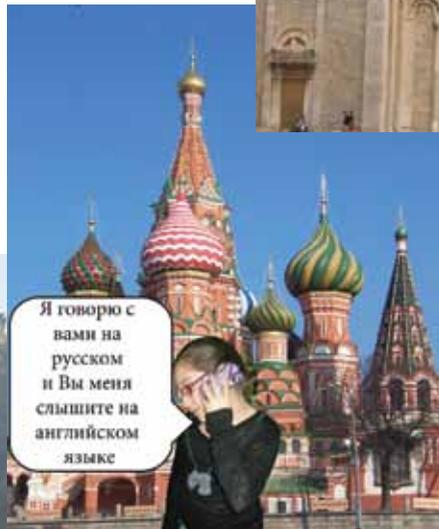
This Internet computer interloper or translator phone app first translates your spoken words into the desired language. It then uses the linguistic resources of its programming to interpret the context of

your conversation. Finally, it uses the correct words, grammar, intonation, and speaking rhythm to speak for you. When the other person on the line speaks, the process repeats to convert and interpret what he or she

is saying to your language.

The amazing thing is that Microsoft, the current leader in the development of this technology, has taken the process one step further than simple on-the-fly language conversion. The voice synthesizer that is part of its universal translator will speak other languages using a voice that basically sounds like you! At this time, Microsoft might lead in this technology, but Google and other technology companies are nipping at its heels with their own systems. I expect the competition to hasten how soon this technology comes to market.

When this technology moves out of the laboratory, per-



haps into the next generation Windows 8 cellphone or Windows Surface tablet, you will need to train

the voice synthesizer to sound like you. The process involves you saying phrases in your language so the computer can record individual spoken sounds. The computer will then substitute your distinctive speech

sounds as it recreates and says each word in the other language.

Basically, if both languages use the "A" phoneme (the way you pronounce the letter "a"), the synthesizer will use your "A" sound whenever it can. It will also use all other basic phoneme sounds from your voice training to make it sound like you are the one who is speaking the foreign language. Frank Soong is the leader of Microsoft's Speech Re-



Jessica Nunes

The balloon shows what each child is saying in the language of the country he or she is in. A universal translator telephone could translate the conversation to the language of the listener on the fly.

search Group, and his team's voice-modeling program can now duplicate the sound of a particular voice in 26 different languages.

On November 8, 2012, Microsoft uploaded a video to YouTube at www.youtube.com/watch?v=vGYKxRWDKo&feature=player_embedded. In it Rick Rashid, Microsoft's chief

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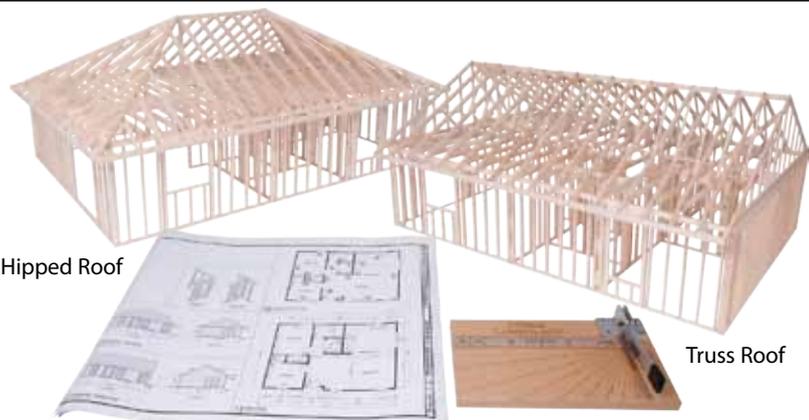
research officer, describes what the company's translating telephone will be able to do. To cut to the chase, you can start the video at five minutes after the start and hear Rashid explain what Microsoft is now doing in language translation and voice cloning between languages.

Microsoft has been working on the translation telephone for years. I found this Microsoft video, posted in March 2010, that might further help you to understand how the system works: <http://research.microsoft.com/apps/video/default.aspx?id=139895>.

Recalling the Facts

1. In the three photos that show different children speaking different languages into their cellphones, use context clues and/or Google Translate to determine the language they are speaking.

2. Do you think that a translation phone could help people around the world better understand each other and thereby increase the chances of world peace? Explain your answer. ☺



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