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Talking the Talk, for Posterity

Oral Online Dictionaries Help Preserve Languages, Cultures Muted by Modernity

By ROBERT LEE HOTZ

VANCOUVER, British Columbia—In 2009, linguist David Harrison first encountered the speakers of Matukar Panau, a language common to about 600 people in two small villages in the hills of Papua New Guinea.

The villagers had no written alphabet, no electricity and no computers. But they had heard of the Internet and believed that if their language were to survive, they would have to put it on the Web.

Dictionaries That Speak

[Listen to a sampler of clips of endangered languages from the new online dictionaries, and see photographs of native speakers.](#)



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The fading language of India's Remo people now has a talking dictionary.

Now they can. At a science conference here Friday, Mr. Harrison, of Swarthmore College in Pennsylvania, and his colleagues at National Geographic's Enduring Voices project unveiled a set of online talking dictionaries that for the first time document the sound, syntax and structure of Matukar Panau and record seven other unusual, vanishing languages, including Tuvan in Mongolia, Chamacoco in Paraguay and Ho, Sora and Remo in India.

"We can hear their words and their songs and learn something of their unique world view," Mr. Harrison said. "It is a bit of a pushback against globalization."

Language experts predict more than half the world's nearly 7,000 languages may disappear by the end of the century, succumbing to political, economic and social change. Government policies that repress minority tongues, the spread of mass media, the need to conduct

business with outsiders and other pressures of globalization are among the threats.

"So many people don't know there is a language crisis," said Juliette Blevins, director of the Endangered Language Initiative at City University of New York.

The new interactive lexicons join a growing body of digital communication tools designed as life

support for these vanishing languages. From Maori to Mohawk and Circassian to Cornish, language survival has become a matter of YouTube videos, Facebook pages, iPhone apps, websites and specialized computer fonts. Even when a language's last fluent speakers die, digital technology can preserve their talk for the day when a future generation may seek to revive their forbears' speech.

Related Video:



Scientists unveil new online "talking dictionaries" that for the first time document the sound and structure of eight vanishing languages. Stefanie Ilgenfritz has details on Lunch Break. Photo: Chris Rainer/National Geographic

"Being able to see the word and hear it is huge," said linguist Norvin Richards at the Massachusetts Institute of Technology.

Mr. Richards has been collaborating with members of the Wampanoag tribe in Massachusetts, whose ancestors helped Pilgrims learn to survive in the New World, to revive their long-dormant language, Wopanaak. In the absence of any recordings, they can reconstruct its sound only by analyzing variations in the archaic spelling of early documents written in Wopanaak, including the text of the first Bible published in the Western hemisphere.

"If only I could hear a recording of Wopanaak," Mr. Richards said.

These digital compendiums are not only more technically robust than fragile old wax recordings or magnetic tapes, but also more extensive—and aren't locked away in academic archives. They are online, where anyone can easily access them.

In the project revealed Friday, to create the talking dictionary for a Native American language in Oregon called Siletz Dee-ni, Mr. Harrison enlisted its last fluent speaker, a master basket weaver named Bud Lane. Mr. Lane painstakingly recorded more than 14,000 vocabulary entries, documenting in his voice the proper pronunciation, inflection and cadence.

"This is a language that packs entire sentences in a single word," Mr. Harrison said. "You can say 'we are fishing' in a single word."



The project is also developing an online talking dictionary for six related Celtic languages: Irish Gaelic, Scottish Gaelic, Welsh, Cornish, Breton and Manx. Later this year, Mr. Harrison expects to release an online talking dictionary for Koro, recently discovered in the Himalayas.

In all, the dictionaries made public at the meeting of the American Association for the Advancement of Science contain 32,000 word entries and more than 24,000

audio recordings, illustrated with photographs of cultural objects.

Generally, scholars prize these rare languages as irreplaceable records of experience and diversity of thought, encoded in vocabulary, verbs and grammatical structure. "There are so many intricacies in these languages that can make you question your own perception of reality," Mr. Harrison said.

To say "go" in the Tuvan language, for example, the speaker first must know the location and identity of the nearest river as well as the direction in which the water is flowing. "If you don't know the river current, you can't say the correct word for go," Mr. Harrison said.

For the isolated villagers in New Guinea, who recently acquired their first computer, the online talking dictionary may boost local respect for the Matukar Panau language among the young. "The aura of technology can make it glamorous," said linguist Daniel Kaufman at the nonprofit Endangered Language Alliance in New York.

Among those trying to revive a language after generations of disuse, such digital tools are invaluable teaching aids. "The technology allows us to bring the spoken language into the home," said linguist Daryl Baldwin at Miami University in Ohio, who is working to revive the Miyaamia language once spoken by his Native American tribe, the Miami of Oklahoma.

The last fluent speakers died nearly 50 years ago, and there are no systematic recordings of the tongue as it once was spoken. So Mr. Baldwin, director of the university's Miyaamia Project, and his colleagues have taught themselves the language from scratch, guessing at the sounds of words based on comparisons to closely related Native American languages.

In May, the Miyaamia Project plans to release a free iPhone dictionary and pronunciation guide. The application turns a smartphone into a bar-code scanner that can respond to coded labels placed on common household items by saying aloud the Miyaamia word for the item.

"That makes the dictionary alive," Mr. Baldwin said.

Write to Robert Lee Hotz at sciencejournal@wsj.com

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