

Rare audio of indigenous languages saved by invention 100 years later

August 8 2017, by Miles O'brien



James Woodenlegs first learned to communicate using Plains Indians Sign Language from his family, when he was growing up on the Northern Cheyenne Reservation in Montana. Known as "hand talk" or "sign talk," the language has been used by both deaf and hearing Indians from Canada to the Gulf of Mexico for at least 200 years, possibly much longer. Woodenlegs is working with sign language scholars Jeffrey Davis and Melanie McKay-Cody to document and preserve hand talk, one of thousands of the world's endangered languages. With help from NSF, they are conducting field research to find current users of hand talk and compile a dictionary. The three are videotaping interviews with Northern Cheyenne, Assiniboine, Sioux, Crow, and several other tribes. Credit: National Science Foundation

Optical scan technology is helping researchers at the University of California (UC), Berkeley, preserve audio of 78 indigenous California

languages, most of which were recorded more than a century ago. The recordings are on approximately 2,700 wax cylinders that are now barely audible due to issues such as mold. These are the only known sound recordings for several of the languages, and in many other cases, the recordings include unique speech practices and otherwise unknown stories and songs.

With support from the National Science Foundation (NSF), linguist Andrew Garrett, digital librarian Erik Mitchell and anthropologist Ira Jacknis, all of UC Berkeley, are restoring these recordings. The researchers are using a non-invasive optical scanning technique that was developed by Lawrence Berkeley National Laboratory physicists Carl Haber and Earl Cornell. The collaboration with Haber and Cornell is enabling the NSF-funded research team to transfer all 100 hours of audio content from the wax cylinders and improve the recordings, finally making it possible to figure out which [language](#) is being spoken and what's being said.

The rich Native American cultural collection will ultimately be accessible to indigenous communities as well as to the general public and scholars. The linguistic diversity of the world's estimated 7,000 languages is immense. Modern technologies like this one unlock the documentation to enable new community uses and scientific investigations.



At least 3,000 of the world's 6,000-7,000 languages (about 50 percent) are about to be lost. Why should we care? Here are several reasons. The enormous variety of these languages represents a vast, largely unmapped terrain on which linguists, cognitive scientists and philosophers can chart the full capabilities—and limits—of the human mind. Each endangered language embodies unique local knowledge of the cultures and natural systems in the region in which it is spoken. These languages are among our few sources of evidence for understanding human history. Documentation is the key to preserving endangered languages. Linguists are trying to document as many as they can by describing grammars and structural features, by recording spoken language and by using computers to store this information for study by scholars. Many endangered languages are only spoken; no written texts exist. So it is important to act quickly in order to capture them before they go extinct. Credit: Nicolle Rager Fuller, National Science Foundation

Provided by National Science Foundation

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