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Rosetta Disk Is Foundation's Gift to Future Linguists --- 1,000 Languages Will Be Etched Inside Three-Inch Circle; First Up -- Nigeria's Degema

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Corrections & Amplifications

ROGER KENNEDY, former director of the National Park Service, and Michael A. Keller, Stanford University Librarian, are board members of the Long Now Foundation. A Marketplace article Tuesday misidentified Mr. Kennedy as Stanford University Librarian. (WSJ June 8, 2001)

Around 196 B.C., a council of ancient Egyptian priests inscribed a decree on a granite slab affirming the rule of 13-year-old Ptolemy V and providing three translations, including one in a form of ancient Greek. After Napoleon's troops in Egypt recovered the slab, the Rosetta Stone, in 1799, linguists used the Greek to unlock the Egyptian hieroglyphics, whose meaning had been lost for centuries.

Now, a small San Francisco foundation is leading an effort to create a modern Rosetta Stone, a collection of 1,000 translations of the first three chapters of the book of Genesis into languages from Abkhaz to Zulu. The foundation's far-thinking backers hope the project will help decoders in the distant future recover languages of our own day, many of which will certainly be lost.

"If it's good with three, why not with 1,000?" asks Stewart Brand, best known as the founder of the Whole Earth Catalog and now a board member of the Long Now Foundation, which is coordinating the Rosetta Project. "In the fullness of time, civilizations come and go. It would be good to have better re-start capabilities."

When the collection is completed next year, roughly 30,000 pages of linguistic submissions will be inscribed by ion beams in tiny text onto three-inch nickel disks and encased in glass balls. The technology provider, Norsam Technologies, of Hillsboro, Ore., says tests show the disks will last at least 1,000 years, withstanding salt water, sunlight and nuclear radiation using the technology, developed at the Los Alamos nuclear labs. The foundation will distribute 1,000 disks to libraries and museums, and sell them to individuals around the world, all under the archival principle, "Lots of Copies Keep Stuff Safe."

The hope is that at least some of the disks will survive and prove useful to future archaeologists. The glass balls encasing the disks are rudimentary magnifying glasses. Larger text in eight languages spirals around the edge of the disk as a kind of hint to discoverers to magnify the disks further. The Rosetta Project backers assume future generations will at least have a 1,000-power microscope to enlarge the tiny type. They won't need what will surely be long-lost technology: the personal computer, a Windows operating system or even electricity. The information will be presented in plain text, not digital bits.

Linguistic experts say by 2100, up to 90 percent of the world's 6,000 to 7,000 languages are in danger of becoming moribund, or even extinct, as industrialization and globalization reach every corner of the globe. Most of the world's recent losses come in once language-rich regions of the world, such as Papua New Guinea, Indonesia and Nigeria. One language becomes moribund every 10 days, on average, experts say, meaning that children no longer learn it and speak it.

With modest funding -- \$165,000 over two years from the Lazy Eight Foundation, of Denver, Colo. -- the project is attracting submissions by linguists from around the world. No single expert could possibly check every submission, so the Rosetta Project relies on a network of linguists to correct each others' work.

Mr. Mason began by collecting nearly 1,000 translations of the world's most widely translated text, Genesis, mainly from Bible societies. The decision to use a biblical text generated a heated debate within the foundation over its religious associations, but Mr. Mason says the availability of translations made it the only

practical choice. The next most-translated text, the Universal Declaration of Human Rights, has been translated into about 300 languages.

The project's Web site, www.rosettaproject.org, is becoming one of the broadest collections of language information on the Internet. Jim Mason, the anthropologist directing the project, calls it "the Linux of linguistics," referring to the open-source operating system developed collaboratively over the Internet. "A large collection of languages is way too complex for one person, or even one group of people to tackle," Mr. Mason says. "The only way to do it is create a global collaboration."

In technology terms, Mr. Mason describes the Rosetta Project as a "platform" able to support a wide variety of activities. It includes a range of material in each language, including indigenous creation stories, terms for colors, the so-called Swadesh list of the 100 words that occur in almost every language and "orthographies" describing writing and speaking styles.

The project began as a demonstration of possibilities for long-term data preservation. The record of the digital age -- dependent on ever-changing computer platforms and formats -- promises to be startlingly impermanent. Older media aren't much better. Newspapers and videotapes have a life expectancy of less than 30 years. Acid-free paper and some types of microform can last up to 500 years but are susceptible to heat, humidity, scratching and sunlight. History has shown that libraries burn down, museums are neglected and time capsules are forgotten.

"We're building amnesia into our civilization, which is probably a non-robust thing to do," remarks Mr. Brand.

The Long Now Foundation's focus on the far distant future is meant to stretch the time-horizon of planners, executives and leaders by 100 or 500 years, if not by 10,000. (It's already working on the deca-millennium bug, referring to the current year as 02001.) Its most well-known project is a "10,000-year clock" currently in several prototype forms, including one at the National Museum of Science and Industry in London. It ticks once a year, has a century hand that advances every 100 years and tolls every 1,000 years.

The Rosetta Project is a kind of complement. "It's very hard to send information into the future," says Kevin Kelly, a foundation board member and former executive editor of Wired magazine. "It's even harder to send values, or any kind of information that's embedded in a culture."

Other board members include musician Brian Eno, futurist Paul Saffo, Stanford University Librarian Roger Kennedy, and old-timers Danny Hillis, a pioneer in supercomputing; Mitch Kapor, a founder of Lotus Development Corp., pundit Esther Dyson and Doug Carlston, the co-founder of Broderbund Software.

The first and so far only completed submission is for Degema, spoken by about 22,000 people in two communities in Nigeria. A Nigerian linguist studying in Japan, Ethelbert Kari, prepared a detailed description of the language, pronunciation and common words. There were originally three dialects of Degema, but one became extinct when its speakers adopted Kalabari, the language of the Abonnema people.

"If one is a native speaker of a language, one will soon realize how sad and hopeless it is not to be able to speak or think in that language again," Mr. Kari said in an e-mail exchange. "Indeed, this pain is hanging upon the faces of many speakers who have lost their languages."

There is no complete survey of the world's languages, says Doug Whalen, vice president of research at Yale University's Haskins Laboratories and the founder of the Endangered Language Fund. The fund has distributed about \$60,000 to help in such projects as recording elderly speakers of Dakota and a video drama in Choctaw, both Native American languages, but it has resources to capture no more than a handful of languages. The Rosetta Project is useful in focusing attention on the long-term preservation of keys to unlocking language fragments that might survive into the future.

"I'm happy preserving samples for 100 years, but thinking about what we'd like to leave for 10,000 years, that's a different picture," Dr. Haskins says. "If this was all that remained of these languages, it's really not enough to preserve them. It doesn't stop the extinction, but it's better than nothing."

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