



TOWER OF BABEL

This Old School Wearable Puts a Thousand Languages Around Your Neck

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Modeled after the Rosetta Stone, this nickel-sized wearable has 1,000 languages on it, including Swahili, Arabic and Hindi.

Image: The Long Now Foundation

Most wearable devices are digital and connect to a smartphone app. Not this one. The [Rosetta Wearable Disk](#) is a two-sided coin you wear around your neck. The point? To offer an offline library of languages.

A project of the Long Now Foundation, which fosters long-term thinking, the goal is to take our current languages, put them into a micro time capsule and catapult them 10,000 years in the future. "It's an overwhelming time scale," said the project director *Laura Welcher*. "We're pushing people's boundaries, as they usually think of the quarterly return or the four year election cycle. What if you can get people to think about the future? Projects that pave the way open up new ways of problem solving."

To Welcher, the wearable is meant to act like a backup in case of a digital dark age, or a time in the future where all electronic information is obsolete and unable to be read. "In case thousands of years from now, if websites no longer exist, and if no electrical power exists, one can still use an optical system and sunlight to recover the information," said *Bruce Ha*, the president of *Stamper Technology Inc*, which designed the wearable. "The disc is very much like a microfiche, except a thousand times smaller as a 'nanofiche.'"

It's inspired by the actual Rosetta Stone, a large slab of granite rock from ancient Egypt which was inscribed with roughly 14,000 pages of Egyptian hieroglyphs and Ancient Greek. It acted as a dictionary to understand the languages for future generations. "That was the key to start deciphering it," said Welcher. "That's the same thing we're trying to do with the Rosetta disc, but for more human languages."

It wasn't easy to take thousands of pages of written text and reduce them down to a nanoscopic size that fits in the palm of your hand. Just like the actual Rosetta Stone, the text on this wearable is written in a very small font. Except here, the text is micro-etched onto a palm-sized disc using a highly focused laser technology.

The wearable was made by Nano Rosetta, a Rochester, NY-based wearable company which Ha owns. Usually, they preserve people's personal memories onto medallions with a photolithography etching process and make medallions with micro-sized pages of the bible. This wearable is scrollable with a micro magnifying glass to read the pages, sort of like microfiche but tiny and onto 100 percent nickel, which can withstand 2,600 degrees Fahrenheit.

According to Ha, they had to accommodate nickel allergies, so put the nickel slab inside a stainless steel pendant and covered it with a watch crystal. Each inscribed nickel can last 10,000 years and has been environmentally tested by the Los Alamos National Laboratory, the US Department of Energy's national laboratory in New Mexico. "They found no degradation when the nickel exposed to normal conditions," said Ha. "Extrapolated, this means tens of thousands of years or more."



There are a thousand languages on the wearable, including English, Russian, Swahili and Hindi, which were chosen by whatever was available. Thousands of pages were inscribed onto a 2 cm wide medallion the size of a coin. It's readable only with a lab-quality microscope. "Imagine a hard copy archival system that requires no energy for thousands of years," said Ha. "Wikipedia has millions of articles and no one has even tried to make a printed hard copy because it would be crazy taking years of nonstop printing, but NanoRosetta technology can print everything in less than a month on a set of discs that can be held on one hand. The technology is that fast."

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The language books were scanned from library books, dictionaries and vocabulary collections of word lists, as well as the UN Declaration of Human Rights "in as many languages as possible," said Welcher.

Instead of having one large rock, like the original Rosetta Stone, the idea is to distribute them—for a price. The wearable is a limited edition run of 100 and they each cost an upward donation of \$1000. They went on sale last month and all proceeds go to the Long Now Foundation. According to Welcher, 20 are still available.

"We are interested in testing this as an example of long-term archiving," said Welcher, "and putting them out there in the world as one of the ways to help keep information safe and taking good care of civilization."

Since digital systems fail everyday, the wearable is a bit of a warning to our own digital era. Why would we increasingly trust our information to digital archives, when there is no promise there won't ever be a wipeout? There could be a digital dark age. "It's an archive of humanity people are wearing around their necks, it's a precious thing," said Welcher.

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