Future Speak

The Long Now Foundation wants to assemble every human language on one nearly indestructible disk -- and, maybe, to last forever

By Michael Scott Moore
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Jim Mason is stout and sturdily built, with a mass of dirty-blond hair that looks like it once hung to his shoulders. On a warm day he wears no shoes around the Long Now Foundation's airy Presidio office. He's an artist who assembles big sculptures out of machine parts in a Berkeley storage yard, and once a year he does pyrotechnic projects for Burning Man. (He's the one who first set up kerosene flamethrowers to spew those high columns of fire you see in pictures of the Burn between 1998 and 2001.) The Long Now Foundation hired him to design and develop a much smaller objet d'art, a nickel "Rosetta Disk" that's supposed to serve as a modern Rosetta stone. The original Rosetta stone, a basalt slab that helped scholars crack the code of Egyptian hieroglyphics, preserved a decree by Egyptian priests in three different languages. If the Long Now Foundation has its way, by 4002 or so, Mason will be looked on as some ancient, long-dead priest of the third millennium who left behind a key to understanding some ancient, long-dead language -- say, Yiddish.

Paolo Vescia

The Long Now Team: Catherine Bacon, Alexander Rose, Kurt Bollacker, and Jim Mason, with an early prototype of the Rosetta Disk.

Paolo Vescia

Alexander Rose.

Paolo Vescia

Exaggeration? Maybe, but not by much. The Long Now Foundation, a future-minded think tank, has a handful of Rosetta-like projects meant to live into what the company calls "Deep Time." There's the "Millennium Clock," designed to last 10,000 years, a prototype of which gonged on New Year's Eve 2000. (It won't chime again until 2100.) There's the "Long Bets Foundation," intended to pay out long-term prophecies with cold cash. And there's the "Long Server Project," which looks into keeping the data on Internet servers available for decades or even centuries. An outfit devoted to Deep Time projects can't very well vanish in the near future, and that poses an interesting problem. "If you look at organizations that have been able to maintain continuity for hundreds of years," says Kevin Kelly, former executive editor of *Wired* and a co-founder of Long Now, who speaks in a soft voice and lately wears an Amish-style beard, "a lot of them are religions. So the question is, "What do you do to become a religion?'"

The Rosetta Disk is one small answer to the riddle of longevity. An "iconic object" designed to last about 2,000 years, the disk itself is

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The Rosetta Disk, in an earlier incarnation.

heavy nickel, 3 inches in diameter, and decorated with the words "Languages of the World" swirling around a core of 30,000 microetched pages. The pages contain a small bit of text -- 27 pages from the biblical story of Genesis -- and some basic phonetic and grammatical details, printed in at least 1,000 languages, legible only under a 1,000x microscope.

The first prototype should be ready this fall, packed in a shotputlike metal sphere with a magnifying-glass top. Long Now's idea is to create a durable, attractive piece of art that families might keep as an heirloom. If it survives, Kelly fantasizes, it might even become the basis of a future cult, which would ensure the sphere's safety and perhaps (along with the Millennium Clock and other "icons") turn Long Now into a durable organization.

"I don't think it's an apocalyptic object," Mason says. The Disk might survive a nuclear winter, but planning for a total collapse of civilization isn't the point of Long Now. "There's a variety of purposes for the Disk, from the iconic to the actually functional."

The Disk is already an icon, in fact, for a more awesome project -- a massive effort to collect basic information about *every existing language* into a single online database, called the All-Language Archive. In some ways the Disk is beside the point: It has led to a practical, down-to-earth venture that may be more important than a bunch of microscopic Genesis translations. What started as a dreamy experiment by a handful of Buckminster Fuller-ish future theorists at a Presidio nonprofit has evolved into a serious effort to preserve the world's dying tongues, and Mason -- to his considerable surprise -- finds himself in charge. Maybe that's why he talks so stiffly sometimes, using a lingo one might call "visionary-bureaucrat." He's not an uptight guy, but he moves around the office with a stressed, intense concentration laid over his native bohemian looseness.

"We found ourselves in possession of a tool," he says, "and a medium" -- the Web -- "that allowed for a collaborative creation of a very broad reference work, one that we're now on the verge of recasting as an attempt to finish one of the [critical] data sets of humanity." (The human genome map would be another major data set.) The goal, he explains, is to create "a record of human languages, tending towards All."

You hear the word "All" a lot at Long Now (along with "iconic" and "data quest"). Founders and employees use it in a way that sounds capitalized -- as if it were a noun. Kelly explains the company's notion of the word: "If you ask the question about what there is on Earth --

any subject, if you ask it on a global level, the answer is, 'We don't know.' How many phones are there in the world? How many miles of road? How many board feet of lumber? How much fresh water? How many fields of corn? ... We don't know anything about our planet at this planetary scale." A census of the planet's telephones might sound to you and me like unknowable nonsense, but Kelly thinks world civilization is ready for such ultimate information. He believes a truly global economy -- when it arrives -- will need intelligence on the level of "All."

Long Now is a 6-year-old foundation devoted to this kind of unconventional thinking about the future. The name (dreamed up by Brian Eno, the former member of Roxy Music who sits on Long Now's board) refers to humanity's current place in world time -- somewhere in the middle -- and the Rosetta Project sprang from a very Long Now-ish series of "thought experiments" about how to keep information safe for centuries. Co-founder Stewart Brand explained the problem of a hypothetical "10,000-Year Library" in a 1998 article for *Civilization* magazine. Digital storage, he argued, wouldn't work. CD-ROMs are built to last about 15 years; software formats change even faster. "Historians will consider this a dark age," wrote Brand. "Science historians can read Galileo's technical correspondence from the 1590s but not Marvin Minsky's from the 1960s."

Today's data is tomorrow's gibberish, in other words. So where do you begin if you're Long Now, and you want to set up a 10,000-Year Library to go with your Millennium Clock? Brewster Kahle, who founded the Internet Archive (a project to back up the entire Web), recommended the group try an experiment in microetching. He knew of a promising firm in New Mexico that could engrave a bunch of information, digital or not, in tiny print onto a long-lasting metal or silicon disk. "It's largely no different than a big, giant, marble tablet," says Alexander Rose, Long Now's executive director. ("Just carved a little smaller," adds Mason.) The place to start with a microetched library, it seemed, was a collection of languages that would serve as a key for scholars in the future.

Rose clarifies: "What use is the library if people in the future find it but can't read the data? We have libraries like this now, like the Etruscan tablets -- largely totally untranslated. The language is there, but we don't know it." So Long Now decided to microetch a metal disk with 1,000 translations of an excerpt from the Bible, which has been translated not just hundreds of times, but hundreds of times *more* than any other piece of writing.

"It turns out there's just absolutely nothing anywhere close [to the Bible's prevalence]," says Rose. "Probably the closest accessible thing is the Declaration of Human Rights that the U.N. has. It's translated into a few hundred [languages], but nowhere near a thousand or 2,000. The next most translated text is some writing of Lenin's."

Rose says Long Now decided on an Old Testament excerpt -- though the New Testament has been translated more often -- because "at least it crossed three major world religions, and it was a Creation story." Using Genesis to preserve Igo (a Nigerian language) is certainly odd, but maybe not as odd as it would have been to use the Gospels to preserve Arabic.

So the Rosetta Project, a thousand versions of Genesis microetched on a disk, was conceived in 1999 as an experiment in long-term data storage. Rose and the others at Long Now figured it would be a straightforward matter to collect a bunch of existing translations. To manage the project, they hired Jim Mason, who had spent time in Papua New Guinea for an anthropology master's at Stanford and who impressed Rose, at the '99 Burning Man, as "someone more than willing to try desperately audacious tasks" -- like those big fire cannons. They found grant money for the project from the Lazy Eight Foundation, in Colorado.

Right away there were problems. How does one read a page of Buriat, for example -- top to bottom, right to left, or what? The team members didn't want to preserve a language upside down. Come to think of it, they didn't want to make *any* ignorant little mistakes. "The range of languages we were working with is one that no single individual or group of individuals was going to be able to cover," says Mason. "So, by coincidence, this very curious thing called the Net had started to happen, and it provided us a unique platform for a very geographically distributed collaboration," with hundreds of experts from around the world "contributing material, as well as reviewing material."

The Web site the team established (now at www.rosettaproject.org) was meant to be a "selfish" resource, to help finish the Disk. Long Now posted Genesis translations and added basic, descriptive details about the languages in question (grammar, phonetics, a simple list of near-universal words), then invited experts to criticize everything. "We just got besieged with interest," says Mason. "People were stunned that someone had set out on the audacious task of describing and collecting [language] documentation at this great a number."

"And all of a sudden," says Rose, "it became the largest collection of such things on the planet."

Linguists tend to be more interested in the Rosetta Project Web site than in the cool nickel Disk. When Mason traveled to Washington, D.C., in 2000 to introduce his Disk project to the International Society of Linguists -- and maybe ask for a little help -- the reception "was initially somewhat mixed," says Doug Whalen, vice president of research at Haskins Laboratories (which is affiliated with Yale). "It wasn't clear what practical purpose the Disk would serve."

The Web site was a different story. Linguists tend not to be tech-savvy, and there are a number of reasons why most academics would never attempt an All-Language Archive of their own. (Most of them are too smart, really: They would know ahead of time -- in a way that Rose and Mason didn't -- what the project involved.) Now that an archive exists in embryo, however, what academics in particular seem to like are those 200-word lists of near-universal terms (like "tree," "stone," "hand"), because comparing these words helps them research language evolution and migration. Whalen says such lists have been compiled for language groups all over the world, "but no one has done it for so many languages, and certainly no one has put it online. ... They help tremendously with figuring out how closely related languages are."

Time is running short for this kind of work, because linguistic diversity is going the way of species diversity. Hundreds if not thousands of tongues are spoken only by a few isolated and elderly speakers, so linguists need to get to those speakers before they die -- and take their rare words with them. The Rosetta Project wants to ease that problem, if it can.

The site lists 1,470 languages so far, out of about 4,000 worldwide that have paper documentation -- either published in dusty books or "languishing away," according to Mason, "in file cabinets and shoe boxes and closets," where missionaries or far-flung researchers might have left it for posterity. The project's goal for the next five years is to collect that written information on the rest of the world's languages and put it online. This first step toward an All-Language Archive seems modest when compared to the company's *really* ambitious second step, though: collecting data on the remaining 2,000 or 3,000 languages that aren't even documented. Of course, such a huge undertaking might not get funded by the Rosetta Project's backer, the Lazy Eight Foundation, which supports unorthodox educational and scientific work. Fieldwork may be unorthodox, but it's also expensive.

"We're not making any claims as to whether we're gonna start a new fieldwork project," says Mason. "The levels of [financial] support needed to make any significant dent in the new-language documentation effort is gigantic -- hundreds of millions. Right now the Rosetta Project is working on $5 million for the next five years."

Still, fieldwork isn't out of the question, given the eccentric tendencies of the man behind the Lazy Eight Foundation, Charlie Butcher. Butcher is a retired cleaning-products mogul who knew Buckminster Fuller, the forward-thinking inventor and architect who developed the geodesic dome. "[Butcher] was equally surprised by what's happened here," says Mason. "He signed up to collect some Genesis translations and have a disk. Well, this much larger data quest happened, and that was never imagined."

The Rosetta Project's own idea of the Disk has also evolved, from a storage experiment and potential devotional object to a printout of the Web site. This fall's first Disk features 1,000 languages, but Mason hopes that in five years, after the Web site has been loaded with all 4,000-odd documented languages, microetching technology will be far enough along to allow a 4,000-language Disk. "And then at serial points [afterward] -- maybe every five years? We don't know -- we do a printing of the database. So the Disks become records of the database at points in time."

They also become, presumably, cheaper. Early 4,000-language Rosetta Disks will go to donors who've given $25,000 or more to the project, which means the priceless first prototype belongs to Charlie Butcher. The eventual goal is to bring the price of a Disk down to about $100. "It's not gonna be $5, ever," says Mason. "But as a unique family artifact, it should be affordable, and as a real, Deep Time archive it has to have worldwide distribution."

The Rosetta team wants to sell heirloom Disks through the Web site, not just to families but to museums, governments, libraries, and any other kind of institution that's interested.

Response to rumors and early press about the Disk has been huge, so one hopes -- the way you might hope for your playwright cousin to succeed -- that Long Now won't fold too soon.

Long Now, for all its blue-sky ideas, looks like a fun place to work. If you don't mind a blocky concrete office building designed by the military that feels like a UC campus dorm, the views of the Presidio are spectacular and the people are smart, open-minded, and simpatico. The conversation is always interesting. When I last visited, someone had just installed a "meteor burst" antenna over Jim Mason's desk -- what looked like a length of sprinkler pipe, built to send radio signals that bounce off meteor trails in the ionosphere. Long Now needs it to communicate with a weather station near Ely, Nev. Why? Well, the foundation owns a limestone mountain close to Ely that might become the home for a really big Millennium Clock.

The vision for the limestone mountain is to build a massive cave where a version of the clock might survive and become a pilgrimage site. "It's just ticking away," imagines Kevin Kelly, the former *Wired* editor, "and maybe there's a library, and people are tending it, and it's a place where people go and have conferences. Who knows?"

Yeah, who knows? Kelly has a way of fantasizing about the future of his organization that sounds simultaneously crazy and modest. He's a gentle, quiet man -- not an egotist -- and he understands that Long Now may not survive the life span of its founders. It is, after all, *not* a religion. Still, it's worth mentioning that Kelly thinks of Burning Man as a sort of proto-religion -- "ritual without theology." He says, "The Man is exactly the same every year, and they've got this very elaborate and *completely meaningless* ritual, and they maintain continuity. It's transparent right now, but who knows what would happen over millennia?" It may be no coincidence that most of the Long Now office clears out every year for Burning Man, or that the foundation owns a mountain in Nevada.

One idea behind Charlie Butcher's funding outfit -- Lazy Eight -- is that lazy, idle thinking can produce interesting practical results. The Rosetta Project, if it finishes its All-Language Archive, might become Exhibit A for this notion. Of course, Kelly and the others at Long Now realize that civilization may collapse in a hundred years, that the Rosetta Disk might be vaporized in a nuclear attack, or the Millennium Clock might get sand in its gears and conk out before the year 3000. Long Now is certainly not a front-runner in the race to become an enduring religion, but, says Kelly, "we can certainly make that attempt." He shrugs, with the romantic's stubborn insistence that the attempt in itself is worthwhile.

"We're future junkies," he says. "That's *Whole Earth*, and it's *Wired* -- that's just our diction." He shrugs again. "We're trying to think ahead."