

Japan's 1,000-year-old warning

When the tsunami struck Miyatojima island, a story passed down through generations meant residents knew what to do and kept many safe.

José Holguín-Veras, Imperial Valley Press, 3-11-12

I am an engineer and a disaster researcher; I went to Japan after the March 11, 2011, magnitude 9.0 Tohoku earthquake to try to identify lessons there that could benefit future disaster-response operations. In late May, I was following the usual research routine of interviewing individuals involved at the various stages of the disaster response, and particularly those involved in the distribution of critical supplies as part of the relief effort. In a refugee center on the beautiful island of Miyatojima, at the entrance to Matsushima Bay, I stumbled on a story that, by its reach back in time, taught me something unexpected: Collective memory, as much as science and engineering, may save your life.

After a long day of field work, my colleagues and I were chatting with a community leader, Koutaro Ogata, from a fishing village called Murohama. We asked what had happened to him in the moments after the earthquake. He told us that he and his neighbors were well aware that a large earthquake would generate a large tsunami and they knew, particularly, what to do because "a thousand years ago" a massive earthquake and tsunami had all but wiped out Murohama.

This is the story he told. A millennium ago, the residents of Murohama, knowing they were going to be inundated, had sought safety on the village's closest hill. But they had entered into a deadly trap. A second wave, which had reached the interior of the island through an inlet, was speeding over the rice paddies from the opposite direction. The waves collided at the hill and killed those who had taken refuge there. To signify their grief and to advise future generations, the survivors erected a shrine.

This story might not have captured my attention if it hadn't been for a fortuitous coincidence. The day before, an engineering colleague, Eiichi Taniguchi, had told me that researchers at Tohoku University in Sendai, Japan, had found sediments indicating that a huge tsunami had hit Miyatojima about 1,000 years ago. Intrigued by the possibility of a connection between oral history and geological evidence, I asked the community leader if "a thousand years ago" was a figure of speech or an estimate of time.

To my astonishment, he indicated that it was in no way a figure of speech. Village elders had reviewed the local temple's records and found reports pinpointing a large tsunami 1,142 years ago. It was most likely the result of the massive Jogan Jishin earthquake of 869, which devastated the Sanriku coast. Thirty years before the great Mayan cities were abandoned, at the height of the Muslim and Chinese empires, when Europe was in the midst of the Early Middle Ages (and 600 years before Columbus stumbled into the Americas), a community of unknown fishermen honored their dead and successfully sent a warning to future generations.

Some 50 generations later, on March 11, 2011, the Murohama tsunami warning tower — which was supposed to sound an alarm — was silent, toppled by the temblor. Still, without the benefit of an official warning system supported by modern science, the locals relied on the lesson that had been transmitted generation to generation for 1,000 years. "We all know the story about the two tsunami waves that collided at the shrine," I was told.

Instead of taking refuge on the closest hill, the one with the shrine, they took the time to get to high ground farther away. From the safety of their vantage point they saw two tsunami waves colliding at the hill with the shrine, as they did long ago. Tragically, not everyone made the right choice; I was told of at least one person

who died.

Later, I saw the shrine — a simple clearing by the side of a hillside road, with stone tablets and roughly made figures — and I heard the old story and the new one again: A community remembered what it had been told and did the right thing.

I have to admit that I have not been able to keep this story of survival out of my mind. I know that science and engineering save lives. But in this instance neither did much to help. A message sent into the future 1,000 years ago did. Reaching out from the distant past, long-gone ancestors — and a deeply embedded story — saved their children.