How Do You Say Computer in Hawaiian?

In 1983, only 3,000 Hawaiians spoke their native language.

Now, a new movement is using a BBS and networked classrooms to teach children their lost legacy.

By Constance Hale

It is 1823 in Honolulu, and the Reverend Hiram Bingham is sitting down to his writing table. Not one to let tropical humidity dampen his sense of propriety, Bingham is wearing a black frock coat and high-necked white blouse. His countenance: austerity in the extreme. Bingham is leader of a group of New England Calvinist missionaries who have come to the Polynesian chain with one express purpose: to stamp out paganism.

To this end, Bingham is bracing for a formidable task, one that will take him and his seven accomplices 16 years to achieve: translating the Bible into Hawaiian. Bingham's Bible project will be no cakewalk: Hawaiian—a poetic Polynesian tongue with few parallels to English—has never been consigned to letters. Only one printing press even exists West of the Rockies—an aging Kansas iron-and-mahogany model Bingham hauled around Cape Horn. But no matter: Bingham is determined to hoist the pre-literate, ancient Hawaiian culture into a new medium and a new age.

Now, fast-forward. A trio of unlikely geeks is huddled around a computer rammed into the corner of a tiny office at University of Hawaii in Hilo, a modern campus whose blocky concrete buildings defy the lush surroundings. The three are Keao NeSmith, a 29-year-old hunk of a Hawaiian wearing a white WordPerfect T-shirt, blue-and-black plaid shorts, and black zoriz; Keiki Kawaile‘a, a 58-year-old perky mom dressed in tapa-print culottes and gold cloisonné bracelets (whose black lettering spells out her full name, Keikilani, or “child of the heaways”); and Keola Donaghy, 35, the full-bellied son of an electrician from Philly, sporting jeans, a UMEM T-shirt, and aviator glasses.

The year? 1994. The mission? To undo much of what Hiram Bingham set in motion a century and a half earlier. The means? A Mac IIx with 8 megabytes of RAM and a 175-Mbyte hard drive. This is the central nervous system of Leoki (the powerful voice), a Hawaiian-language bulletin board system that is one of the first BBSes set up to teach a Native American language. In addition to e-mail, it features a newspaper, chat lines, a tailor-made Hawaiian-English dictionary, user feedback, and a voting booth.

The trio’s purpose is every bit as religious as was Bingham’s: they want to save their ancient culture. They, too, are using language—what their UH colleague Professor Larry Kimura describes as “the bearer of a people’s culture, history, and traditions.” Unlike Bingham, they are attempting to retrieve something that had almost slipped away. But can technology bring a lost legacy back from the brink?

When the Hawaiian Islands were “discovered” by the British Captain James Cook in 1778, about 350,000 Hawaiians inhabited them. These Polynesians cultivated plantations of bananas, coconuts, sugar cane, and taro. They cooked pigs and harvested the sea. Living in villages of thatched huts, they were guided by concepts of mana (spiritual power) and kapu (human laws or taboos). Chiefs and priests held sway over commoners. Tradition and heritage were expressed primarily through chant and dance.

Needless to say, when the missionaries arrived in 1820, they were less than thrilled by this version of paradise. Their attitude was aptly summed up by the 19th-century evangelist A. F. Judd: “Darkness still brooked over the land, and there still continued idolatry, the taboos of the priests, wars, famines and death.” The language, too, seemed primitive and deficient in the missionaries’ eyes: not only had it never been written down, but it lacked a whole host of words the missionaries deemed critical. (Jesus, for starters.)

But there were dissenters. Reverend Lorenzo Lyons, for one, praised the native tongue as “grand, old, sonorous, and poetical.” Lyons wrote: “I’ve studied Hawaiian for 46 years but am by no means perfect ... it is an interminable language ... one of the oldest living languages of the earth, as some conjecture, and may well be classed among the best.”

(Answer: Hului or electric brain)
And while there had been no writing in Hawaiian before Bingham - no Bible, no books, no newspapers - there were stories. There were stories about Maui, the Hawaiian Apollo, who wove a rope out of his sister's hair, snared the sun as soon as it rose one day, and negotiated for longer hours to fish, farm, and dry bark cloth. There were stories about Pele, the goddess of the volcano, who expressed her wrath with molten lava and orange fire. And there were ancient chants that related the spiritual, familial, historical, and cultural vitality of Hawaiians; among them was the Kumuilipo, a creation myth that has often been compared with Beowulf.

But the Hawaiians' belief in chants and the power of the spoken word didn't necessarily translate to a belief in the written word. When Liholiho, the young son of the conqueror Kamehameha I, asked missionary Asa Thurston to write his name, Thurston spelled it out: "il-lo-hi-ho." Liholiho looked at it "long and steady," according to a missionary account, then announced to Thurston: "This does not look like me, nor any other man.

Written or not, Hawaiian was an incredibly precise language - especially when it came to things that really mattered to Hawaiians. No fewer than 17 names exist for the various winds of tiny Hālawa Valley on Moloka'i. And each of the different permutations of just one kind of fish has its own term: pua'a ama is a "mullet under a finger length"; kahahaha a "mullet about eight inches long"; and 'ama'ama a "mullet about 12 inches long."

But, for all its richness, the language still struck the missionaries as lacking: there were no words for such New Testament ncessaries as faith, holiness, throne, and demoniac. "The natives call an angel either an akua, a god, or a kanaka lele, flying man," lamented one missionary. Another pointed out that the Hawaiian aloha had to be used in the Bible for everything from salvation, to love, charity, and mercy.

But the missionaries made do. They devised an alphabet, settling on 12 Roman letters for Hawaiian words, plus a few more letters for foreign words. When a Hawaiian synonym didn't exist, they just transliterated: "Christ" began Kristo, "David" began Kāwāka, "school" began kula.

Ultimately, Bingham's Bible did help bring literacy to the Hawaiians - by the turn of the century, 125 newspapers were being printed in the Hawaiian language. But what began as an assault on Hawaiian spirituality soon widened to an assault on the entire culture. The missionaries suppressed bawdy chants and the salacious hula; American and European immigrants wrested lands from Hawaiian chiefs; hoole (white) businessmen, seeking to improve agricultural profits and backed by US Marines, overthrew Hawai'i's monarchy. And, by 1900, the Hawaiian tongue - the culture's linchpin - was officially banned from government offices and could only be taught in public schools as a foreign language. This prohibition on speaking Hawaiian ushered in a century of linguistic decline.

"I didn't realize Hawaiian was a dying language until I went to Honolulu," says Keao NeSmith. "My friends would speak to me in Hawaiian; I answered in English. No big deal." As a child, NeSmith was steeped in Hawaiian tradition: he grew up among Hawaiian-speaking families in Kekaha, a rural town on the western shore of Kaua'i, and his mother is a master of the hula. A Mormon, NeSmith attended the Brigham Young University on O'ahu's North Shore, then followed friends to Provo, Utah, where "pick up whatever was left of the roof." But however much his home had been destroyed, other cultural forces had wreaked even greater devastation on Hawai'i as a whole. "Seeing Honolulu was really depressing, really sad," he says, referring to the development and overcrowding that had turned the capital into a "concrete jungle." The Hawaiian language, too, needed rescue.

NeSmith's timing was perfect. By 1992, two decades of Native Hawaiian activism were coming to fruition. The civil rights and anti-war movements of the '60s and early '70s had sparked anger and stirred ethnic pride among Native Hawaiians, who moved to reclaim their land, their language, and their heritage. If there was one watershed moment for the dying Hawaiian language, it must have come in 1985, when a study showed that only 32 students under 18 (most of them concentrated in remote hamlets of Kauai and Ni'ihau) were able to speak Hawaiian. (At the time, experts estimated that fewer than 3,000 adults spoke the language - most of them over 60, scattered across seven islands, and speaking mostly English day to day.)

Immediately after the study, a dedicated group of professors and activists - many of them now at the University of Hawai'i in Hilo - gathered in Honolulu to start plotting the great Hawaiian-language comeback. Step One: repeal the century-old law prohibiting the teaching of Hawaiian in public schools. Step Two: establish a system of public schools with Hawaiian-language immersion programs.

Today, students attend eight Hawaiian-language elementary schools on five different islands. One middle school has opened its doors, and last January, state agencies approved (to the tune of US$2.1 million) the first Hawaiian-language high school to open its doors in a century. Classes will start there this September.

Once the schools started opening, it came time to hoist the Hawaiian language into the techno age - hook, line, and SLIP connection. That's when NeSmith joined forces with Keiki Kawai'ae'a and Keola Donaghy. In computer networks the three found a new medium that used the oral and the textual as its currency, a medium perhaps better suited to an oral tradition than the book ever was.

The BBS idea started when Keiki Kawai'ae'a became one of the first teachers...
for the Hawaiian-immersion schools, known as Kula Kaiapuni. Like the children she coaches, Kawai‘ae’a reflects the ethnic soup that is Hawai‘i and the Pacific Rim. A mix of Hawaiian, Chinese, and Okinawan ancestry, she was raised on Maui and in Los Angeles. Her foundation in the Hawaiian language came from her family, where she was the eldest of 18 grandchildren at the family ranch. She credits her Hawaiian grandfather for instilling in her a sense of tradition. Her first fishing lesson: Never catch a fish and think it’s your pet.

At the University of Hawai‘i in Honolulu, Kawai‘ae’a was inspired by Professor Larry Kimura, well known among Hawaiians as a Hawaiian-language scholar and songwriter. Before long she was a Hawaiian-studies teacher at a Honolulu private school. And after 10 years, she moved to Pā‘ia on Maui, to launch the Kula Kaiapuni there.

Computers were an essential part of her plan: she wanted to instill students with a sense of pride in both their language and its utility. “We want everything available to children who speak Hawaiian that is available to children who speak English,” she says. “We want children to know that Hawaiian is not just good enough for sitting at a party and talking story. Hawaiian is good enough for every part of life. That is the sign of a healthy, living language.”

But during time with her students in the computer lab, which was stocked with Apple II and III computers, Kawai‘ae’a was faced with a new dilemma: how to make her pupils as computer-literate as any other students while using all-Hawaiian instruction. “They were so excited about computers,” she remembers, “but the only thing we had to teach them was in English.”

Soon, Kawai‘ae’a latched onto the promise of telecomputing and the hope that in corresponding with each other, students would get more of the pure Hawaiian they’d need: “Our numbers are small at each immersion site, and in many ways the groups are isolated. Could we hook them up to the students at other sites?”

It was at this juncture that Kawai‘ae’a crossed paths with NeSmith, enlisted to translate computer-menu options into Hawaiian, and Donaghy, a computer jock learning Hawaiian on his own. Donaghy’s Irish surname reflects his ethnic identity: he is the son of mainlanders, though born and raised on Maui. After a stint as a cop, then music school in LA and some studio work as a jazz and rock electric-guitarist, he settled into a job at Nadine’s Music in Kahului, Maui. From there he freelanced with Steely Dan (“taking care of the group’s Macs and making sure everything was working”); before long he had started a Macintosh BBS called MauiLink.

By 1990, he was also nurturing contacts in the Hawaiian community, and through the “coconut wireless” (Hawaiian’s grapevine), he hooked up with Kawai‘ae’a. The big kahuna of MauiLink found a new calling – as the big sysop of Leokī.

By March ’94, Donaghy had Leokī up and running. Six months later, the Kula Kaiapuni were on the Net; soon after they were homesteading on the World Wide Web. Today, a dozen years after the original study (and wake-up call) showing that only 52 Hawaiian children spoke their native tongue, the number is 1,000 and climbing. And that’s just the kids.

“I’m mother dreamer,” says Kawai‘ae’a, adding: “Keola is father doer. We can’t make our dreams happen without technology. It’s taken thousands of hours to figure out how to make technology work for us.”

### But once the machines are there, what on earth do you call them? Do you transliterate, naming the computer *kamepiula*? Or make up a new term, like *lolouila*, or “electric brain”?###

Beginning with the terminals in the various computer labs, Donaghy and Kawai‘ae’a linked the sites with a Macintosh IIfx server (donated by Apple Library of Tomorrow) and FirstClass software (bought with a $5,000 grant from the Bank of Hawai‘i). They connected the server to a statewide electronic services gateway that gives islanders toll-free access from anywhere in six of the state’s seven inhabited islands. (The seventh and smallest inhabited island, Ni‘ihau, has no phones.)

They named their brainchild *Leokī*.

As it turned out, the mechanical obstacle - getting the computers and setting up the BBS – was the easiest part of Donaghy’s job. Other hurdles were far greater – ones Hiram Bingham would have found all too familiar. Donaghy had to devise a means to word process two diacritical marks, without which Hawaiian would be much tougher to decipher. For instance, take out the diacriticals in the word *pā’ū* (pah-oo) and you get *pau* (pow). It’s the difference between the term for a Victorian riding skirt and the word for “finished.”

He had to be inventive. What hardware and software combination could accommodate such idiosyncrasies as the ubiquitous glottal stop (denoted by a single open quote before vowels and equivalent to a consonant) and the macron (a bar over vowels that changes their sound)? He modified screen fonts, created a new keyboard layout, and made sure that once logged on, a child didn’t see a single word of English.

This accomplished, Donaghy found he could translate programs like ClarisWorks and Kid Pix into Hawaiian. And he imported the entire text of the immersion program’s working dictionary into Claris Dictionary – after all, nothing would be complete without the ability to have kids spell check their assignments. Having created new characters, Donaghy customized the keyboard and modified the initial login screen to read entirely in Hawaiian.

Kawai‘ae’a, Donaghy, and NeSmith managed to get computers that spewed Hawaiian throughout the classrooms of the Kula Kaiapuni. But once the computers are there, what on earth do you call them? Do you transliterate (as Bingham did to settle on *Kristo* for Christ), and call the computer *kamepiula*? Or do you make up a term from components that already exist in Hawaiian – say *lolouila*, or “electric brain”?

As the curriculum of the Kula Kaiapuni expanded, teachers found themselves needing terms unimaginable a century ago, when the language had, in effect, become frozen in time. (What is the Hawaiian word for an adventure story? How do you say “floppy disk”?) Before long, Kawai‘ae’a and NeSmith turned to a lexicon committee – comprised of professors and native speakers - that now gathers seven times a year to grow the language. Searching for a Hawaiian term for “upload,” the committee settled on *ho‘ouka*, “to load or put up on.”

*Ho‘ouka* describes how you would put a saddle on a horse. *Ho‘ouka* also gets a suitcase into a trunk. Now it also gets a file...
or to the Net. In other cases, the committee members resorted to Bingham's transliteration methods: they took an English term and made it Hawaiian sounding. "Line" became laina. "Telephone" became kelepona. "Beep" became pīpa.

In the transition from an oral to a more textual tradition, curious resonances crop up. Over and over again each day, a child computing in Hawaiian selects Mālama, from the pull-down File menu. Meaning "to save," mālama has become a kind of rallying cry in contemporary Hawai'i: mālama pono means "take proper care," mālama 'aina means "save the land," and mālama 'ōlelo means "save the language." Perhaps unwittingly, the children are "saving the language" every day.

The Pāia School sprawls across the lower slope of Haleakalā, Maui's enormous dormant volcano and "house of the sun." The main building is a gracious, turn-of-the-century hall that lords over a sweeping grassy lawn shaded by banyan and monkeypod trees.

At Pāia School, the Hawaiian-immersion classes open each day with an oli, a call-response chant between teacher and students. In the chant, students - fresh off the lawn from running and playing - ask permission to come into the class and seek knowledge.

The children gather and chant:

The Net may be a fertile ground for languages, like Hawaiian, emerging from an oral tradition. After all, computer networks - home of the "live chat" - bridge the spoken and the written.

Ka uka o Kaukini (from the uplands of Kaukini)
Ka nahele 'o Waihō'i e (to the forest of Waihō'i)
Komo e, kome ma loko nei (may we enter, do we have an invitation)
Ma loko aku ho'i au e (we acknowledge your welcome and shall now enter).

The teacher having granted permission, they enter a generous high-ceilinged room with louvered windows and hardwood floors. In one half, the walls are azure blue, decorated with posters of Hawaiian kings and queens and kids' block prints in the style of Polynesian petroglyphs. In the other half - a computer lab jammed with 25 terminals - walls are covered with a hand-drawn cartoon character, kind of a Casper the Friendly Computer. He speaks in Hawaiian: Leo nahe nahe (speak in a sweet, gentle voice), Mai ku'i i nā pīhi (don't pound on the keys), Ho'ī ho'ī i kāu pā malu (return your floppy disk).

Of the school's 250 students, roughly half are in the Hawaiian-immersion program. I visit the "lead class" - 17 fifth- and sixth-graders, most of them of an ethnic mix favoring Hawaiian.

As I sit and try (unsuccessfully) to blend in, four children - with deep mahogany-colored skin, black hair, and dark, alert eyes - cluster around an L-shaped table. Today, they are tackling long division - in Hawaiian! Their sense of identity is evident: one boy's T-shirt reads Pākona kani 'ia ina/i Waihe'e Maui (an ancient Hawaiian proverb describing how a coral reef grows into Waihe'e Maui), emblazoned above a drawing of a Hawaiian warrior in a field, a giant volcano looming behind him. The slogan is straight from a land battle Hawaiians recently won against a Japanese developer planning to lay a golf course over an ancient burial sight.

But leave the politics to the adults; these are still kids, struggling with math.

"Kumu!" (teacher) they call, whenever they're stuck. When it's time for a live chat with Kumu Keiki, in Hilo, the entire class sits on the floor in front of a projection screen. Students take turns typing messages. One boy, named Keawe, types gingerly, then loses all self-consciousness when Keiki Kawai'ae'a sends him a reply: "Wait," he begs in Hawaiian, "Can I answer her?" Everyone helps him spell out: "o kinopo pōpoku ko'a hāuki punahele" ("football is my favorite sport" - with a couple of spelling errors thrown in).

"Computers lend a lot to their literacy in Hawaiian," says teacher Māli Maemela, adding that reinforcing literacy is critical in what is otherwise an oral tradition. Even more than longhand, computers heighten the children's consciousness of spelling and expression as they write, edit, and revise.

"The urgency and value of computers is higher here than in conventional schools," Melemai says. These kids really hunger for connections and look forward to the day when the BBS will link them with kids on the mainland and around the Pacific. "Leolēkō opens a door for them, to friends who speak Hawaiian and who are not teachers, who are their own age but far away."

"It's fun," says 11-year-old Lē'ahi Hall, who says Leolēkō is her favorite application.

"You can talk to friends on other islands that you miss a lot - and you don't have to use the telephone."

The articulate, balletic sixth-grader, daughter of an attorney and an activist, plans to use Hawaiian throughout her life. Her ambition? To become a teacher "like Kumu Keiki and Kumu Māli, because the language needs to go on."

Talk to kids like Lē'ahi - or to Keola Donaghy, who is organizing Hawaiian lessons via the Internet - and it all seems so simple: get Hawaiian online, spread the word, revive the language. But is it?

The best way to learn languages is through immersion - not just in the language, but in the culture. The same is true for Hawaiian, perhaps even more so, since it has always been largely aural and highly esoteric. Mary Kawena Pukui, the late expert in Hawaiian, warned that the language has more words with multiple meanings than almost any other. She told the story of some eager business folks who wanted to give a new hotel a Hawaiian name. They chose Hale Le'a, or "joyous house." Little did they know that le'a also means "orgasm." And what about the Hawaiian language's sheer musicality? (Hawaiians were so taken aback by the consonant-laden harshness of English, writes Larry Kimura, that in slang they called it nāmâ, "grumbling," and hihi'o, "of a flatulence-like whistling.")

Can a computer BBS - or, for that matter, can the Net - ever do justice to a language so full of melody and nuance?

Or, on the other hand, is the Net a fertile ground for languages like Hawaiian? After all, computer networks - home of the "live chat" - bridge the spoken and the written. But who knows yet whether the global village promises a flourishing of indigenous tongues, or whether the Net will become, linguistically, The Great Homogenizer?

Maybe the language of the online world will be enriched by projects like Leolēkō. Certainly, NeSmith, Kawai'ae'a, and Donaghy envision the day when islanders are linked...
with Hawaiian-speaking émigrés on the mainland. Ultimately, they plan to link up Hawaiians with their Polynesian cousins throughout the Pacific.

Perhaps the Hawaiian experiment with technology will be mirrored by other projects in indigenous languages – ones that have been all but subsumed by a more widespread national language. Imagine BBsEs spreading Catalan, Welsh, Breton, or Maori, the indigenous language of New Zealand, whose 850 native “language nest” schools have been an inspiration for the Kula Kaiapuni. (Unlike the Hawaiian schools, which suffered a devastating blow in January when the new Republican House threw the future of the Native Hawaiian Education Act into political jeopardy, the Maoris have enjoyed full government support – including a cabinet-level language minister for Maori affairs – that Hawaiians have, so far, been denied.)

For some, like Leokī supporter Steve Cisler of Apple Library of Tomorrow, such BBsEs represent the kind of community building that is the essence of telecomputing. The task, he says, is to get more people to talk to each other, and that will happen as more people hear – usually by word of mouth – about the real benefits of being in touch with others across the globe and of having access to useful information. He compares telecomputing to Amish barnraisings where a community bands together to fill a need. Telecomputing, he adds, achieves the same thing and can be delivered in the same spirit.

A vestige of plantation Hawai‘i, Pā‘ia School reminds me – in its architecture, grace, verdancy, and those umbrella-like trees – of the elementary school I attended in another plantation town on O‘ahu. But at Waialua Elementary in the ‘60s, despite a large native Hawaiian population, Hawaiian culture was only present in traces. We did learn one hula each year, but that was for an annual festival of oddly European origins: May Day. We spoke pidgin English (a creole that mixed influences from each of the islands’ main ethnic groups – Hawaiian, Caucasian, Chinese, Japanese, Filipino). No one spoke Hawaiian – not the teachers, not the kids who were by blood pure Hawaiian, not the haole like me.

What a thrill to visit the UH-Hilo campus and to hear everyone speaking exclusively in the beautiful language that so nearly perished. And it’s not just the language they are bringing back, it’s the culture. Every child I meet there greets me not in the mainland way, by shaking hands, but in the Hawaiian way, with “aloha” and a kiss on the cheek. “A hui ho!” they call after me as I leave: Until we meet again!

Born and raised in Hawai‘i, the islands are indisputably, deeply, my home. Yet, ironically, I have never felt so much an outsider as when wandering the halls of UH-Hilo, listening helplessly to so many voices chattering in Hawaiian. More profoundly than at any other time in my life, I am reduced to a haole in the most original sense of the word: because I don’t speak the Hawaiian language, I have become “a stranger.”

But the revival of Hawaiian isn’t about estrangement; it’s about bridges. One image, in particular, has stayed with me from UH-Hilo: As I am leaving Edith Kanaka‘ole Hall (named after “Auntie” Edith, an educator, advocate, and cultural scholar), I walk down a long, gently sloping ramp. It leads away from the maze of lōnai that connect the campus’ utilitarian concrete buildings, to wide, sloping lawns sheltered by abundant, ancient trees – banyan, norfolk pine, hala, coconut palm.

Ahead of me is a young man we might, in pidgin, call a “moke”: He’s a strapping native Hawaiian, dressed in a local version of the ‘90s protest outfit – worn black T-shirt and long-slung shorts, black zoris, ponytailed dreadlocks that reach all the way to his okole, and a squarish, straggly beard. He’s big, beefy, and imposing.

Approaching us from the direction of the lawn is an older, fragile Hawaiian woman whom we’d affectionately call a tūtū (a grandmother, auntie, or older). She displays a headful of neatly combed white hair and wears a sky-blue polyester blouse and white slacks; she carries a very ’50s pocketbook.

“Ala‘o!” she calls out to her opposite, and they launch into a spirited, enthusiastic conversation. They are “talken story” as we would say in that bastard local lingo. But for their heart-to-heart they choose Hawaiian, not pidgin. In the melody of their exchange a message is clear: Hawaiian, that elegant language once thought dead, is reclaiming its home.