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# The Fragile Edge

Diving and Other Adventures  
in the South Pacific



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## Big Songs

**H**UMPBACk WHALES (*Megaptera novaeangliae*) arrive in the waters around French Polynesia during the austral winter and spring (July to November). Although little is known of their migratory route from the krill-rich waters of Antarctica, it's likely they navigate using the underwater topography of the South Pacific. Perhaps they pathfind using notable, persistent icebergs, such as B-15B, then slalom between islands, distinctive reefs, and seamounts until they arrive at the jumbled underwater heights of the Tuamotu Archipelago.

Supporting this hypothesis are a few photo identifications. Individual humpbacks from French Polynesia occasionally appear in photographs in the Cook Islands, and some from the Cooks are seen in Tonga, while some from Tonga appear in New Caledonia, and a few from New Caledonia appear in New Zealand. Scientists theorize that the humpbacks of Oceania behave much like the peoples of Oceania, maintaining unique cultural identities within island groups, while sharing cultural exchanges across vast ocean distances.

The ancient people of Polynesia likewise traveled these routes in the course of colonizing the islands of Oceania, and they may well have tagged along on the journeys of the ocean's wildlife in order to facilitate their own travels toward familiar places and toward new frontiers. A Maori story tells how the small seabird *ku-*

*aka* (bar-tailed godwit) guided people from Alaska to Aotearoa (New Zealand) along its eight-thousand-mile migratory route. The story of Paikea, the mythic ancestor of the Ngati Porou people of Aotearoa, describes how he left his homeland of Hawaiki and traveled to New Zealand by riding on the back of a *taniwha* or whale (the same legend that inspired Witi Ihimaera's novel *Whale Rider*). Some Maoris say the inspiration for the traditional double-hulled outrigger *waka* (*va'a* in Tahitian, *wa'a* in Hawaiian) canoe arose from observing the way pairs of whales sometimes forge side by side in rough seas, enabling the smaller and more vulnerable members of the pod to travel in the smoother water of their wake.

However they get here, a few humpbacks arrive in the waters of the Tuamotus each winter, and while the females are busy birthing and tending their calves, the males sing — initially the same song they were singing when they departed the tropics for the trip to the Antarctic the year before. But over the coming season, this old song evolves subtly and continuously, with all the males incorporating the novel phrases until, by October, a new twenty- to thirty-minute opera has been created. Roger Payne, the father of humpback song research, theorizes that male whales are displaying feats not of strength but of memory. Whatever they really mean, these tunes pass from one subgroup to another, appearing on the charts in New Caledonia and Tonga a year or two after debuting in Australia.

I first heard the Tuamotuan humpback song on a mosquito-infested night at the Hôtel Kia Ora, when I abandoned my bed and retreated to the starlight on the dock to fish with a hydrophone and headphones. From the cocktail of chatter below — the snapping shrimp, the territorial calls of fish, the rasping of mollusks, the popping of feeding planktivores — I heard the plaintive song of a humpback whale like a distant cellist practicing in the dark.

At other times and places I have been closer and heard the song of the humpback more clearly, but this singer, suspended

upside down in the black ocean (as humpbacks tend to do when singing), bathed in his own reverberations, provided me something better: the eavesdropping excitement of tuning in to a shortwave radio. By adjusting the frequency (the directional hydrophone) and playing with the volume, I managed to catch fragments of this truly foreign language, despite the static of distance and snapping shrimp.

Layered with low-frequency moans, punctuated with whups, yups, yees, whoos, moos, chirps, and blats, the song seemed to come from another universe. Yet it felt intensely familiar, as it had since I first heard Roger Payne's seminal recordings of humpback songs in the 1970s. These strange underwater voices resonated as archetypal in the full Jungian sense of the word: as familiar as a memory and speaking a metaphorical language understandable no matter what your native tongue. Like the howlings of wolves and the trumpeting of elephants, there is meaning in this music.

If the earth's (or ocean's) hum is the collective voice of our planet, then the humpback is the soloist, Homeric in his scope, indefatigably and poetically in love with repetition and rhyme. Researchers recorded one humpback singing nonstop for twenty-four hours and still singing when they sailed away. Built for travel, the humpback's song is emitted within the forty- to three-thousand-hertz band at one hundred seventy decibels of amplitude — powerful enough to punch through the near-field/far-field boundary. You can see the effects of this if you find yourself close to a singer, as the surface of the water dances from the sheer volume of the song, water droplets bouncing off the agitated surface. Even better, if you are lucky enough to find yourself in the water in proximity to a singer, you will feel the bone-rumbling energy of its voice.

No one yet knows exactly how humpbacks produce their songs in the absence of vocal cords, although evidence suggests they manipulate air through a series of valves and muscles inside blind sacs in their respiratory systems, something akin to a bag-

pipe. If you happen to be in the water alongside the reefs of a volcanic/coral island when a humpback is singing, you may have the opportunity to observe how the topography of the seascape is used to the singer's advantage. Like a human voice amplified in the shower, where the closed confines and running water amplify the voice, so the already-monumental voice of the humpback is made into something truly titanic by the bowl of the living reef.

Imagine what it must be like for the denizens of the reef who are the shower, when after more than a half year of silence, the sea suddenly explodes with the winter's greatest hit. The fish, the invertebrates, the algae, even the waves throb to the beat.

Filming outside a Polynesian barrier reef on a windless day, we come across a pod of about thirty pilot whales, genus *Globicephala* (Latin *globus*, globe; Greek *kephale*, head) — a species of small whale or very large dolphin depending on your point of view. Their heads are bobbing clear of the surface, and the large melons of their foreheads look for all the world like floating bowling balls. The pilot whales are asleep, dangling vertically from the surface while keeping their blowholes dry. So deep is their repose that we are able to cut the outboard, coast up, and slip into the water on snorkel, unobserved.

Gigantic males, slender females, and calves of every size hang from the clothesline of the surface, swaying slightly in the current, as if a collection of large black limp whale-skins are hanging out to dry. Then, completely inaudibly to us, something is heard, something is said in response, and, without a moment of hesitation or a murmur of dissent, all the whales slip back into their whale suits, roll over, throw their flukes into the air, and sound.

That they are running from us is not unique, as this species is normally wary of and even potentially aggressive toward divers. But the whales don't appear to be running away from us so much as sprinting toward something. Instead of sounding to a depth beyond our sight, they remain at about thirty feet, traveling so fast that we can actually see their muscles rippling as sheets of

skin slough off like discarded black cellophane, an adaptation designed to decrease their drag in the water.

Intrigued, we track the pod by boat for several miles along the reef until they lead us farther offshore to the spectacle of a pair of wrestling humpback whales. Even from the surface we can see them sparring in tai chi motion, twisting and turning around each other, thrusting with the long swords of their pectoral fins, huge flukes slashing in a scene of unbelievable power and grace.

Slipping underwater, we enter the thick soup of their sound: the groans, the dungeon-door creakings, the roars, the bulletlike *rat-a-tat-tats*. This soundtrack is further layered with the whistling and click-trains of a school of about eighty rough-toothed dolphins (*Steno bredanensis*), who are buzzing like hyperactive mosquitoes around the whales — darting between the barrel-bodies, under the fins, around the flukes. Meanwhile, our guides, the pilot whales, have taken on the demeanor of kids at a carnival, shooting maniacally in all directions, adding their own layer of sound in the form of whistles, squeals, screeches, pulse calls, and echolocational clicks. They join what appear to be twenty other pilot whales.

The sparring whales break off abruptly when a female humpback swims by. She is moving fast, and her exit from our sight is like a gigantic eraser sweeping across the blueboard of the sea, wiping away all three big whales, fifty or so smaller whales, and roughly eighty dolphins. Scrambling back to the boat, we take off in pursuit, following the female humpback, who is sprinting greyhoundlike in the lead, powering just below the surface, visible by the white edges of her pectoral fins and the broad gray beam of her back. When she rises to breathe, the water mounds ahead of her, a shiny blue pressure wave that thins as she ascends and explodes into the spray of her exhale. The tiny bodies of a dozen or so rough-toothed dolphins jockey for position in her bow wave, popping from below to grab a breath, as buoyant as corks in champagne. Escorting her along her flanks are the sinuous black shadows of pilot whales.

Not far behind, the two male humpbacks are running shoulder to shoulder, trying to outmaneuver each other like tandem U-boats. They are also surrounded by dolphins and pilot whales, and, despite the sound of our outboard motor, we can clearly hear the excited, high-pitched whistling of dolphins, the gunfirelike pops of the pilot whales' exhales, and the low whistles of the humpbacks' inhales as the air soughs across the open bottles of their blowholes.

For an entire afternoon we run with them, motoring far ahead, cutting the motor, and dropping into the water on an intercept course. Time and again they pass by us, just a few feet above the thick, cropped cover of the coral reef, the whales never breaking stride, only rolling slightly onto their sides so that we can clearly see their big eyes orbiting in their sockets as they seek to take in the strange forms of us. Unlike some whales in the northern hemisphere who have grown accustomed to snorkelers and divers, these southern-ocean giants have probably never seen human beings underwater, and if not for the important business at hand, would probably stop to investigate, as cetaceans often do.

But this is a drama of life and death, whale style. Not that the males would likely fight to the death (though they might), and not that the female is likely in any danger (though she might be). This is more the drama of evolutionary life and death, with a pair of males vying for access to a female and the chance to pass their genetic legacy forward. The female, meantime, is awarding that privilege, inadvertently or not, to the best whale.

What the pilot whales and rough-toothed dolphins are doing here might be less clear to us had we been observing only from the surface. But from underwater it's impossible to avoid the palpable sense of excitement akin to a crowd gathering at the fight scene of colossi. While the sight is compelling, the sound of the behemoths in battle is like primal screams echoing through a surround-sound theater. Add to this a female humpback, willing or not, and the scene takes on all the rowdiness of an IMAX porn show.

Clearly this is fun on an order of magnitude worth waking from deep sleep for (the pilot whales) and worth abandoning normal daytime rest for (the rough-toothed dolphins) — a fact borne out by subsequent encounters over the years with sparring and/or mating humpbacks in French Polynesia, who are invariably joined by rubberneckers and eavesdroppers of both the cetacean and the hominid variety.