

Song of the Curious Alien: Humpback Whales as Proxy

Lisa Walker, University of California Davis, Davis, United States

In 2021 I ventured up to Alaska with my WhaleSETI colleagues (Laurance Doyle, Brenda McCowan, Fred Sharpe, Josephine Hubbard and Jodi Frediani) to conduct playback studies with humpback whales. Watching from the bow of the boat where I had deployed my hydrophone, I was witness to the 20-minute conversation we had with Twain, a 38-year-old female humpback whale. The protocol was simple in nature, we broadcast a “whup” call via our underwater speaker and she responded by whupping back. This encounter was reported in our paper published in Peer J (Interactive bioacoustic playback as a tool for detecting and exploring nonhuman intelligence: “conversing” with an Alaskan humpback whale. McCowan et al) and is considered a breakthrough in the study of non-human intelligence and communication.

As we contemplate initial communication attempts with alien life forms, a simple call-and-response exchange like what we had with Twain is conceivable. But at some point, the conversation will need to evolve beyond “Hello/Hello” to a shared communication schema. Humpbacks give us a marvellous opportunity to craft such schema, not only with their social sounds such as the whup call but with their intricate, evolving song.

Humpback song is thought to be one of the most complex vocalizations in the animal kingdom with researchers such as Jim Darling noting that all humpback whale males in a population sing fundamentally the same version of a complex, progressively changing, series of sounds at any one time. In his book *Among Whales*, Roger Payne observes that humpback whale song and human music are strikingly similar and seem to boast the same laws of composition. This overlap, according to Denise Herzing, fulfills a primary requirement for success in cross-species communication.

As a researcher, my quest is to understand whether something fundamental connects our two systems of song, something deeply rooted in our shared evolutionary history that provides the foundation upon which our systems of songs are built. My aim is to work with emerging tools and technologies to build a picture of humpback song that captures the

entirety of its unique dynamism and investigate how information is encoded in its inter-dimensional patterning. The goal is then to apply these findings to construct a song-based METI signal, one which indicates both intelligence and biosignature while optimized for clear long-distance communication.

Each year I venture to Maui to record the changes to the humpback's song and each year I am ever more fascinated by the intelligence of this animal that continually creates and composes. As I sit in my kayak their song breaks the air/water barrier and I can hear it as clear as day without my hydrophone or speaker. As a musician, it strikes my ear as music, complete with melodies, rhythms and refrains. My desire is to let go the confines of scientific inquiry, the logic of analysis and simply just sing with the whales.

Without an existing a priori "original" alien signal, our unique encounter with Twain underscores the fascinating world of interspecies communication here on earth and informs us of the vast possibilities as to how might we converse with non-earthly beings. By drawing on both our human linguistic and musical capacities, and exploring intuitively, while remaining anchored in logic, mathematics, and behavioral understanding, the future holds much promise to dissolve boundaries between species, allowing us to communicate on a deep and meaningful level.

https://youtu.be/K_7vIleSA7U?si=tXL0ik26bTdIGX9g