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The following is an open letter to the global scientific community.

By scientific community I refer to all post doctoral researchers in all fields of science.

I would like to address Cetacean Communication.

Firstly, I understand the rigours of academic research, writing and publication having proofed all Dr Trish Franklin and Dr Wally Franklin's scientific publications and having been intimately involved in all of The Oceania Project's research programs since their inception.

I have been a director of The Oceania Project since 1988.

I myself am not an academic nor do I desire to be. I am simply an audio engineer and sound designer who has been listening to whale song sometimes 24 hours a day 7 days a week, for weeks on end, year after year, since we began recording digitally with Dr Doug Cato's naval class stereo hydrophones, custom built pre-amp and Sony digital recorder in 1992.

I believe the Humpback Whale Sonar Theory to be a viable theory.

I have come to this belief through my bioacoustic observations during the last 33 years.

The humpback whale song cycles intersperse low and high frequencies rhythmically. I hear the low frequency pulses getting gradually lower and the high frequency pulses get gradually higher. Not in a linear fashion but in a melodic fashion which is easier for the young whales to learn and remember.

The frequency rise and descent especially in the low frequencies is extremely subtle and in some cases almost audibly imperceptible to humans. Although easily visualised using spectrogram software. The spectrogram software also shows that what seem to be simple high and low frequency pulses are actually complex chords of frequencies. Finally, at the end of the cycle there is a crescendo to the highest frequency pulses and then the cycle repeats again continuously. Often twenty four hours a day in my observations in Hervey Bay.

All the whales in the population learn the same song cycle for each particular year. The song evolves not only in a linear fashion along the timeline but in a vertical fashion with the modulation of frequencies which far surpass the bandwidth of the audible perception of humans.

I do not believe that humans have developed technologies to adequately assess the frequency bandwidth of humpback whale song.

I believe that the frequency bandwidth of humpback whale song is far greater than we have initially been able to measure.

Professor Peter Tyack, in collaboration with two computer engineers, has created an application to assess the information entropy of humpback whale song. That entropy, or inherent information content, has been compared to a range of human languages. The data indicate that humpback whale song is a language with an extremely slow transmission rate of less than 1 bit per second.

Although I feel that Professor Tyack's paper doesn't address the fact that the information content of whale song is much greater than human language because the frequency bandwidth is perhaps far greater than we have so far been able to measure. Also, the transmission rate is slower simply because the whales emit pulses over vast distances so significant time between pulses is absolutely necessary to delineate 'words' and 'phrases'.

Because lower frequencies travel further than high frequencies this gives all the singers SONAR Sound Navigation and Ranging feedback on each others' positions. The singers in fact become moving acoustic way point beacons for all whales in the population. The blanket of whale song encompassing the entire migratory group up and down the coast delineates safe navigational distances, keeping all individuals within the population safely within hearing range of the song. SONAR, as you may be aware, was originally reverse engineered from bats and dolphins by the US Navy early last century.

I record with a Zoom H4n Pro at 24 bit/96 kHz sampling rate and an Aquarian Audio H2a-XLR hydrophone stereo pair. The whales emit pulses below 100Hz and above 40kHz. I can see this with the spectrogram software. Adult humans can, at best, hear between 500Hz and 16kHz.

I record with a stereo pair of hydrophones, one over the port side and one over the starboard side of the vessel. So I have extremely large stereo spacing and positional feedback of the singers' locations, as wide as the whales' perspectives. I usually record from midnight till dawn, weather conditions permitting.

I can hear the difference between a young inexperienced singer and a much older and larger accomplished virtuoso.

At equinox I hear the very large and skilled singers pulsing sound into the bay. To warn all the inexperienced younger whales and lingering mothers and calves that it is time to make the return voyage to Antarctica. Seemingly expressing: "Do not wander out of range of the song because if you are a young and inexperienced navigator this can easily become fatal". Wally and I agree that the song is the social 'glue' that transmits (tribal) culture and knits the population together for a safe migratory journey.

This is information which is almost impossible to confirm scientifically.

Although there are other aspects of the song which Wally and I intend to focus on over the next five years which can be addressed scientifically. We have a very large historical whale song archive and database dating back to 1992, which can be cross referenced with Trish's Photo-ID and behavioural database and life histories.

I intend to support Trish and Wally's body of work into the future and to continue recording each year at equinox from midnight till dawn, under Sirius, Orion and the Pleiades at Zenith, and to continue being immersed in the eastern Australian humpback whale culture. Trish, Wally and I have been close friends of these whales all our adult lives and careers.

There is so much more to the humpback whale song which can only be confirmed experientially.

I have a long standing friendship with Uncle Lewis Walker who is a Bundjalung Whale Dreamer. His direct dreaming lineage is of the Yuraygir Tribe at the mouth of the Yamba river. Yuraygir means 'The tribe of the Ancient Great White Whale, the Great Great Grandmother Spirit'. Uncle Lewis through his matriarchal lineage is the last Keeper of the Ancient Songlines of the Whales.

He is the last of the Dreaming Lineage to speak the 'Ancient Language' as well as all seven dialects of the Bundjalung Nation.

Humpback whale song is an ancient language. Sung. A transmission of ancient culture down through time. Down through the millennia. Songlines. My dear friend Uncle Lewis Walker confirms this. Over the past few decades sleeping out with the whales they have approached me in Dreaming. Showing me my possible future timelines in holographic thought forms injected into my Dreams. And what they showed me decades ago has come to pass. Uncle Lewis has confirmed to me that this is a normal occurrence within his Tribal Heritage and Dreaming Lineage.

The humpback whales use the extreme power, precise frequency oscillations and incredibly large frequency range of their song to transmit holographic thought forms to each other. Transmitting cultural knowledge down through the eons. Down through their matriarchal lineage. In a very similar way to ancient Australian tribal cultures. Uncle Lewis has confirmed to me that this is true also.

Humans are able to receive these holographic thought forms through the theta brainwave state in 'Dreaming'. I have had direct experience of this over a thirty year period and direct confirmation from Uncle Lewis Walker that this is a very normal part of his Cultural Heritage and Dreaming Lineage as a Bundjalung Whale Dreamer.

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