

To understand dolphins, scientists turn their language into pictures

Researchers have turned into images the sounds that dolphins make in water, bringing humans closer to deciphering their language.

The key to this technique is the CymaScope, a new instrument that reveals detailed structures within sounds, allowing their architecture to be studied pictorially.

Using high definition audio recordings of dolphins, the research team, headed by British acoustics engineer John Stuart Reid and Florida-based dolphin researcher Jack Kassewitz, has been able to image, for the first time, the imprint that a dolphin sound makes in water.

The resulting 'CymaGlyphs', as they have been named, are reproducible patterns that are expected to form the basis of a lexicon of dolphin language, each pattern representing a dolphin 'picture word'.

The CymaScope captures actual sound vibrations imprinted in the dolphin's natural environment, water, revealing the intricate visual details of dolphin sounds for the first time.

Reid said that the technique has similarities to deciphering Egyptian hieroglyphs. 'Jean-Francois Champollion and Thomas Young used the Rosetta Stone to discover key elements of the primer that allowed the Egyptian language to be deciphered.

'The CymaGlyphs produced on the CymaScope can be likened to the hieroglyphs of the Rosetta Stone. Now that dolphin chirps, click-trains and whistles can be converted into CymaGlyphs, we have an important tool for deciphering their meaning.'

Certain sounds made by dolphins have long been suspected to represent language but the complexity of the sounds has made their analysis difficult.

Previous techniques, using the spectrograph, display cetacean (dolphins, whales and porpoises) sounds only as graphs of frequency and amplitude, according to a release of Sonic Age Ltd.

Within the field of cetacean research, theory states that dolphins have evolved the ability to translate dimensional information from their echolocation sonic beam.

The CymaScope has the ability to visualise dimensional structure within sound. CymaGlyph patterns may resemble what the creatures perceive from their own returning sound beams and from the sound beams of other dolphins.

Kassewitz, of the Florida-based dolphin communication research project SpeakDolphin.com said 'there is strong evidence that dolphins are able to 'see' with sound, much like humans use ultrasound to see an unborn child in the mother's womb.

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