

Male dolphins whistle to maintain key social relationships

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Three male dolphins and one female. Credit: Dr Simon J Allen

Allied male bottlenose dolphins maintain weaker yet vital social relationships with whistle exchanges, researchers at the University of Bristol have found.

While male dolphins are known to use physical contact such as gentle petting to connect with strongly bonded allies, new findings published in *Current Biology* today, show they rely on less time-demanding vocal exchanges to remain connected with weaker allies.

The scientists, with colleagues from an international suite of universities, used nine years of acoustic and behavioral data from a dolphin population in Shark Bay, Western Australia, to assess how male dolphins reinforced and maintained their valuable alliances.

Lead author Emma Chereskin, from Bristol's School of Biological Sciences, said: "Many animals, including humans, use tactile contact, touch, to strengthen and reaffirm important relationships. But as the number of close social relationships increases, so too do the demands on the time and space available for relationship maintenance through physical contact. Male bottlenose dolphins form strategic, multi-level alliances, and we wanted to know how they maintained multiple alliance relationships in large groups."

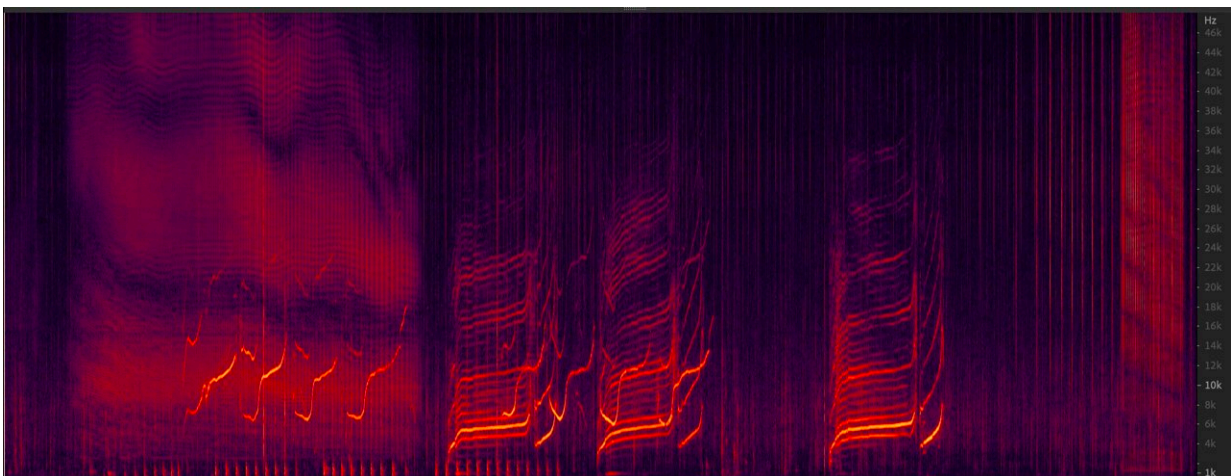


Image of vocal exchange between allied males. Credit: Dr Stephanie King

By following groups of affiliated males, and documenting their physical and acoustic behavior, the research team was able identify the different ways that these males bonded with each other.

Senior author Dr. Stephanie King, also from Bristol, said: "We found that within the core dolphin alliances, strongly bonded allies engaged in more affiliative contact behavior, such as petting and rubbing, while weakly bonded allies engaged in more whistle exchanges. This illustrates that these weaker but still key social relationships can be maintained with vocal exchanges."

In the social bonding hypothesis, Robin Dunbar posited that vocalizations and language evolved as a form of "vocal grooming" to replace physical grooming, as increasingly large group sizes placed impossible demands on the time available for [physical contact](#) behaviors. However, tests of this hypothesis in [non-human primates](#) suggest that vocal exchanges occur between more strongly bonded individuals that engage in higher grooming rates, and thus do not provide evidence for replacement of physical bonding.

"Our findings provide new evidence that vocal exchanges can serve a bonding function" Chereskin said, "but more importantly, and in line with the social bonding hypothesis, that vocal exchanges can function as a replacement of physical bonding, allowing allied male dolphins to 'bond-at-a-distance.' This evidence in support of the social bonding hypothesis outside of the primate lineage raises exciting new questions on the origins and evolution of language across taxa."

"Allied male dolphins use vocal exchanges to 'bond at a distance,'" by Emma Chereskin et al., is published in *Current Biology*.

More information: Stephanie L. King, Male dolphins 'bond-at-a-distance' by using vocal exchanges to maintain key social relationships, *Current Biology* (2022). [DOI: 10.1016/j.cub.2022.02.019](https://doi.org/10.1016/j.cub.2022.02.019).
[www.cell.com/current-biology/f ... 0960-9822\(22\)00241-X](https://www.cell.com/current-biology/fulltext/S0960-9822(22)00241-X)

Provided by University of Bristol

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