

Dolphins use diplomacy in their communication

June 9 2010



A female dolphin communicates by whistling with her baby. Credit: Bruno Díaz

Until now, the scientific community had thought that whistles were the main sounds made by these mammals, and were unaware of the importance and use of burst-pulsed sounds. Researchers from the Bottlenose Dolphin Research Institute (BDRI), based in Sardinia (Italy) have now shown that these sounds are vital to the animals' social life and mirror their behaviour.

"Burst-pulsed sounds are used in the life of bottlenose dolphins to socialise and maintain their position in the social hierarchy in order to prevent physical conflict, and this also represents a significant energy saving", Bruno Díaz, lead author of the study and a researcher at the BDRI, which he also manages, tells SINC.

The study, published by the publishing house Nova Science Publishers in the book *Dolphins: Anatomy, Behaviour and Threats*, presents the most complete repertoire ever of these burst-pulsed sounds and whistles, gathered using bioacoustics since 2005 in the waters off Sardinia (Italy).

According to the experts, the tonal whistle sounds (the most melodious ones) allow dolphins to stay in contact with each other (above all mothers and offspring), and to coordinate hunting strategies. The burst-pulsed sounds (which are more complex and varied than the whistles) are used "to avoid physical aggression in situations of high excitement, such as when they are competing for the same piece of food, for example", explains Díaz.

Sounds that mark out hierarchies

According to Díaz, bottlenose dolphins make longer burst-pulsed sounds when they are hunting and at times of high aggression: "These are what can be heard best and over the longest period of time", and make it possible for each individual to maintain its position in the hierarchy.

The [dolphins](#) emit these strident sounds when in the presence of other individuals moving towards the same prey. The "least dominant" one soon moves away in order to avoid confrontation. "The surprising thing about these sounds is that they have a high level of uni-directionality, unlike human sounds. One dolphin can send a [sound](#) to another that it sees as a competitor, and this one clearly knows it is being addressed", explains the Spanish scientist.

More information: Díaz López, Bruno y Bernal Shirai, Andrea, 2009 "Mediterranean common bottlenose dolphin's repertoire and communication use" En el libro: *Dolphins: Anatomy, Behavior and Threats*, pp: 129-148, Editores Agustin G. Pearce and Lucía M. Correa, Nova Science Publishers, USA. ISBN: 978-1-60876-849-3.

Provided by FECYT - Spanish Foundation for Science and Technology

Citation: Dolphins use diplomacy in their communication (2010, June 9) retrieved 19 September 2024 from <https://phys.org/news/2010-06-dolphins-diplomacy.html>

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