

## Hunting as a group makes sailfish attacks less predictable to prey

February 14 2017



Sailfish hunting sardines in the open ocean off the coast of Mexico. Credit: Rodrigo Friscione

Sailfish are large oceanic predatory fish that attack their prey with their long, sharp bills. When hunting, individuals increase their success rate by



specialising in one attacking side, as a team led by researcher Dr. Ralf Kurvers from the Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB) has now been able to show. The crucial factor: Sailfish always hunt in groups containing roughly the same number of individuals that attack from the right as those that attack from the left. In this way, their prey is unable to predict from which side the attack will occur.

Predators and their prey evolve together: it is vital for predators to develop effective hunting strategies, whereas the prey species is intent on evading its attackers. An international team of researchers involving IGB has investigated the predator-prey relationship between <u>sailfish</u> (Istiophorus platypterus) and sardines (Sardinella aurita). "When attacking, most sailfish specialise in attacks from either the left or the right, enabling them to attack more effectively," reported Dr. Ralf Kurvers, lead author of the study whose results have now been published in the journal *Current Biology*.

The researcher and his team discovered that specialisation in attacking from the left or right – referred to technically as laterality – has its advantages in hunting. In fact, the more strongly an individual was lateralized, the more successful it was in capturing prey: the fish can attack very quickly with their preferred side. This is an advantage because sardines are considerably more agile than their hunters. However, sailfish are only successful predators because they hunt in groups: a single sailfish that always attack from either the left or the right will have difficulty catching its prey, because the prey can then easily predict the side of attack.





Sailfish hunting sardines in the open ocean off the coast of Mexico. Credit: Rodrigo Friscione

The researchers were able to show that the key advantage of hunting in a group is that the <u>prey species</u> is unable to predict whether the sailfish are specialised in attacking from the left or from the right – making the predators more unpredictable to their prey. "The larger the group, the more balanced the left/right relationship is, and the more successful the sailfish will be in hunting sardines," reported Dr. Kurvers.

In their study, the researchers analysed a total of 365 attacks by 73 sailfish, which occurred in 11 groups with up to 14 individuals per group, in the open ocean off the coast of Mexico. In a morphological analysis, the researchers also examined signs of wear in the microteeth



on the long bill used by the predatory fish to attack their <u>prey</u>. This analysis confirmed that most fish prefer to attack from the left or from the right.

The fact that sailfish hunt in groups enables them – in evolutionary terms – to develop a very distinct specialisation. "Our study has enabled us to prove an important advantage that sailfish have when hunting in a group which, until now, was unknown," explained Dr. Ralf Kurvers.

Incidentally, with around half of the sailfish preferring to attack from the right and the other half specialising in <u>attacks</u> from the left, laterality in sailfish differs from handedness in humans: some 90 per cent of the world's population are right-handed, with only ten per cent preferring to use the left hand. "Using the same hand is useful when it comes to cooperative activities, which is why a predominant use of one hand has developed in the course of human evolution. The fact that left-handers still exist is explained by the advantages of this alternative laterality which, however, no longer plays an important role in today's society – namely unpredictability in battle. Around half of top fencers, for example, are still left-handed, and the other half right-handed," explained Dr. Kurvers.

**More information:** Ralf H.J.M. Kurvers et al. The Evolution of Lateralization in Group Hunting Sailfish, *Current Biology* (2017). <u>DOI:</u> <u>10.1016/j.cub.2016.12.044</u>

Provided by Forschungsverbund Berlin e.V. (FVB)

Citation: Hunting as a group makes sailfish attacks less predictable to prey (2017, February 14) retrieved 28 April 2024 from <u>https://phys.org/news/2017-02-group-sailfish-prey.html</u>



This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.