

# Personality clash: scientists discover 'bold' sea anemones excel at fighting

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(PhysOrg.com) -- Scientists studying the behavioural traits of the common sea anemone have discovered that ‘fortune favours the brave’ when it comes to fighting and setting territorial disputes.

Proving the old adage about the ‘size of the fight in the dog’, marine biologists at Plymouth University have found that the personality of a sea anemone will play just as crucial a role as physical size and weapon strength when fighting. Furthermore, a sea anemone may undergo a behavioural change and exhibit signs of ‘shyness’ in the wake of a defeat.

The findings, set to be published in *Proceedings of the Royal Society B* today, could help to broaden the understanding of the factors that influence territory disputes and dominance in biology.

Dr Mark Briffa, from the School of Marine Science and Engineering at Plymouth University, said: “People might not think of sea anemones as fighting creatures, but they regularly battle for the best locations on rocks.

“What we have seen is that those anemones that are bold and quickly recover from being startled, tended to land more blows upon their opponent and therefore won more fights.”

Studying the anemones in laboratories, and at sites along the Devon and Cornwall coast, researchers used a small jet of sea water to trigger the startle response in the organisms, causing them to retract their tentacles. They then measured the time it took for the anemone to return to its normal state.

Dr Briffa said: “The anemones would typically ‘hide’ for around nine minutes – but some were noticeably bolder than others. These specimens were the ones that won the most fights.

“And what was perhaps even more remarkable, was that when we measured the response rate of the losers, post-fight, we found that they remained in a withdrawn state for an increased amount of time, consistent with a behavioural change.”

Anemones are widespread in coastal regions of the country, and settle in rock pools and underwater structures where water will flow over them, bringing them food such as small fish, shrimp and marine detritus.

The tentacles of the anemone are armed with tiny stinging barbs that fire disabling toxins into their prey – but they also possess specialist tentacles that are used purely for fighting.

Such battles can last from anywhere between three minutes to two-and-a-

half hours, and will result in the loser retreating slowly to a new, and possibly less advantageous spot.

Dr Briffa said: “It is fascinating that when we look at such a simple animal as the [sea anemone](#), we see similar personality traits and the same sorts of decision-making during a fight as is seen in much more complex species.”

Provided by University of Plymouth

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