

## Shrimply Come Dancing

by Helen Scales

It's not just David Beckham and Kate Moss who are big in the world of advertising. Tiny cleaner shrimps living on coral reefs also go in for a spot of commercial showing off, but all they want in return is a good supply of dirty teeth and dead scales. The coral reef is a totally different world to our own, but the marketing tactics we get bombarded by everyday are also employed beneath the waves – expensive adverts vying for the attention of choosy customers who all want the best deal. But most of all, those shrimps just love to dance.

A plucky little cleaner shrimp shakes itself from side to side, performing a neat rock n' roll dance before bravely climbing into the mouth of a voracious moray eel. Surely a reckless way to get a meal, but strangely, instead of being gobbled down as a tasty snack, the shrimp busily goes about its job while the eel sits perfectly still.

Cleaning stations are a common sight on coral reefs around the world. Fish visit them hundreds of times a day to have itchy parasites and dead scales skilfully picked off by troops of small cleaner fish and shrimps. Jacques, the obsessively clean cleaner shrimp in *Finding Nemo* was no exaggeration – these creatures really do eat a lot of grime. They will even give SCUBA divers a manicure given the chance.

It's not exactly clear why cleaner fish and shrimps don't always end up as victims of a hungry customer. "I can only speculate that the long-term benefits of being cleaned out weigh the short term energetic gains the client would receive from eating the cleaner", says Justine Becker, a marine biologist from the University of Queensland in Australia. She's been studying the yellow beaked cleaner shrimp, just one of many species of tiny shrimp that contribute to the cleaning services of the coral reef.



A yellow beaked cleaner shrimp gets ready for some rock n' roll

While quite a lot is known about cleaner fish, we know very little about the far tinier shrimps. "The yellow beaked cleaner shrimp is cryptic, living in caves and crevices as well as being partly transparent", Becker explains. This makes them almost invisible and very easy to overlook, which is probably why they have to get up and dance to try and catch the eye of a passing fish.

Becker and her colleagues first noticed the dancing cleaner shrimps while diving on the Great Barrier Reef. By waiting patiently outside reef caves the researchers eventually saw tiny shrimps emerge and begin to rock repeatedly from side to side.

This dancing seemed to be very effective at attracting fishy customers to come and be cleaned.

To test whether the dancing shrimps really are advertising their cleaning services, Becker transferred some shrimps and blue spotted rock cod – a common visitor to cleaning stations – to an aquarium tank back in the lab. The shrimps and fish were kept apart but could see each other through Perspex partitions. By manipulating the shrimps' diet she was able to control how hungry each one was and hence how keen they were to find their next meal.

As she expected, Becker found that the hungrier shrimps danced for longer than those that had recently been fed. The hungry shrimps also dared to dance much closer to the rock cod.

In return, given the choice, the rock cod would rather approach a hungry shrimp that is dancing vigorously, presumably because they think this means they will get a better cleaning service – and the ravenous shrimps are most likely to do a thorough job.

So it seems that the cleaning partnerships of shrimps and fish display all the hallmarks of a human marketplace. The suppliers advertise their products, competing for the attention of potential customers. The adverts are expensive – after all, the dancing shrimps could be spotted by fish more interested in filling their belly than in personal hygiene. And of course all that dancing is hard work, so all in all it pays to only spend as much time dancing as you need to – and hence satiated shrimps don't dance for as long. But hopefully at the end of the day, both supplier and customer benefit from the transaction and go home happy.

Next time you see a famous face advertising the latest luxury product, spare a thought for the tiny cleaner shrimp that has to dance for its dinner.

730 words

**Sources of information:**

Interview with Justine Becker, University of Queensland.

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