

# Consistency builds cohesion in the animal kingdom

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Credit: University of Bristol

Oscar Wilde may have considered consistency "the last refuge of the unimaginative" in human behaviour, but when it comes to fish, the element of predictability is critical. Such are the findings of new research led by the University of Bristol, which reveals that fish with consistent personalities are more successful in social groups and better at helping to build tighter shoals.

The study, the results of which are published today in the journal *Scientific Reports*, is the first to provide evidence for why consistency is advantageous in a real animal environment as opposed to in a theoretical model. As such, the findings have shed new light on attempts to understand how and why certain personality traits evolve over time or in situations.

Dr Christos Ioannou, an expert in animal collective behaviour from Bristol University who led the study, said: "It's not just how you act, but how consistently you do this that determines the success and cohesiveness of the group."

A wide range of animals – from shoals of fish, to swarms of locusts, to zebras on the Serengeti – live in tightly-coordinated [social groups](#). This can help them avoid predation and find food, but the collective coordination it requires can be a challenge.

It has been known for some time that individual animals have distinct personalities and clear roles within social groups. This can be important in coordinating the group. Researchers are now finding however, that individuals also show clear differences in how consistent they are in those personalities. Some are predictable and consistent, while others may be more erratic in their actions and reactions.

This latest study, funded by a Leverhulme Trust Early Career Fellowship, shows that consistent personalities can be beneficial in social contexts.

Through laboratory experiments with stickleback fish, his team found that regardless of how bold a fish is, a consistent individual is more likely to make the first move as a leader. Equally, consistent individuals are more likely to coordinate with the leader by joining them. As a result, these more consistent individuals secure a greater share of the

available food.

With consistent personalities making both better leaders and better followers, groups composed of consistent individuals are more cohesive, allowing the group to make better decisions. It is also easier for distinct leader and follower roles to emerge, making the group more coordinated.

Dr Ioannou, who is based in Bristol's School of Biological Sciences, added: "Consistency of personality has not often been considered in studies of group behaviour. So these results, which demonstrate its importance, are likely to pave the way for future behaviour studies which consider not just an individual's average personality, but also its variation in personality – its consistency."

**More information:** Christos C. Ioannou et al. Individuals that are consistent in risk-taking benefit during collective foraging, *Scientific Reports* (2016). [DOI: 10.1038/srep33991](https://doi.org/10.1038/srep33991)

Provided by University of Bristol

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