

Poor mimics can succeed as long as they mimic the right trait

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There are both perfect and imperfect mimics in nature. An imperfect mimic might have a different body shape, size or colour pattern arrangement compared to the species it mimics.

Researchers have long been puzzled by the way poor mimicry can still be effective in fooling predators not to attack. In the journal *Current Biology*, researchers from Stockholm University now present a novel solution to the question of imperfect mimicry.

Mimicry is when animals have the appearance of another species in order to avoid being attacked. For instance, hoverflies have a similar coloration to wasps in order to fool predators. However, everything need not be identical between the two species for successful [mimicry](#). They can look different from each other in many ways that do not seem to affect their protection from predation. Thus the question becomes how similar a mimic needs to be to gain protection.

"Predators seem to use only one or a few important aspects of the [prey's](#) appearance to distinguish between edible and inedible prey. So if a prey mimics those aspects, it will be protected", says Baharan Kazemi, one of the authors of the study.

Researchers at Stockholm University tested their idea using experiments where blue tits attacked artificial prey. The birds were first trained to distinguish between prey of different colour, pattern, and shape, and then mimics were shown to the birds.

"We discovered that prey that mimicked the colour, but not other aspects of appearance, gained more or less the same protection as perfect mimics. But prey that mimicked only the pattern or shape gained hardly any benefit from their resemblance", says Baharan Kazemi. "We also found that the birds easily learned each of the three aspects when it was present on its own, but colour was learned faster than the others"

The experiments show that [predators](#) focus on particularly striking characteristics, while ignoring others, when learning about prey and making attack decisions. This means that it is enough for a mimicking animal to be similar in the particular characteristics to fool the predator.

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