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A vibrant blue-headed fantail bird is perched on a thin, dark branch. The bird has a bright blue head and back, a black throat and breast, and a white belly. Its most striking feature is its long, deeply forked tail feathers, which are a pale blue color. The background is a soft, out-of-focus green, suggesting a natural, outdoor setting.

Why Do Birds Do That?

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often asked questions

Why do some birds bob their heads when they walk?

Birds such as chickens and pigeons bob their heads as they walk so the world will not be a blur. But why does this happen in some bird species and not others? Head bobbing is found more commonly in birds with eyes located on either side of their heads, or lateral eyes. This is in comparison to having eyes on the front of the head, as found in hunting birds such as raptors and owls. Birds with lateral eyes have little binocular overlap and poor depth of vision. Humans, on the other hand, rely more on eye movements than head movements to catch and hold images while in motion.

When a bird walks, head bobbing lets the bird momentarily fix its eyes on objects. This gives the eyes' photoreceptors enough time, about 20 milliseconds, to build a steady scene of the world.¹ In other words, they can stabilise their visual surroundings by using rapid head movements to achieve or aid their depth perception. Birds will also bob their heads when in flight to focus better on their surroundings, especially when landing. It helps to give them perspective on exactly how far away the thing is on which they are landing.

Although several head-bobbing birds, such as pigeons and chickens, can move their eyes, it seems that their long necks favour moving the head rather than the eyes. This is because of a reflex that allows their eyes to follow objects in motion while the head remains stationary.¹ The head's forward and backward movements are synchronised with the movements of the legs. While it often appears as though the birds are moving their heads back and forth, there is no backward movement at all. The bob is an illusion! The birds are simply moving their heads and allowing their vision to stabilise, so their bodies can catch up, then they are on the move again. This happens so quickly they look like they are using a constant bobbing motion.

The next question is: what is happening during head bobbing? Two curious scientists, Dunlap and Mowrer, first considered this question in 1930.¹ They set a pigeon to walk on a treadmill, with the treadmill acting as a stable environment. The scientists found that the pigeon did not bob its head while on the treadmill. To investigate further, the scientists blindfolded the bird, popped it back on the treadmill and found that the bird still did not bob its head. When the head of the pigeon was kept stable while the body moved continuously forward, however, there was head bobbing. The scientists concluded that head movements during walking are characterised by two phases: the hold and thrust phases. They found that the hold phase serves to recognise moving objects and the thrust phase improves the recognition of stationary food items such as grains.

Building on this work, Dr Mark Friedman conducted a series of experiments in 1975 to test the head-bobbing actions of birds using doves.² His research demonstrated that head movement is controlled more by visual stimulation than the body's movement. This study confirmed the visual context of head bobbing

and excluded the legs moving as an influence. When the legs walk but the visual environment is stable, the head does not bob.

Often, smaller birds do not walk but hop, so do their heads bob? According to a 2007 paper titled 'Head bobbing of walking birds', by Reinhold Necker from Ruhr-Universität Bochum, Germany, 'birds who take small steps do not bob their heads'.³ The paper found that there is a bio-mechanical component to stabilise balance, which is more necessary with long strides.

Why do birds swoop?

When we think about swooping or mobbing birds, magpies, masked lapwings and noisy miners are often those that come to mind. But why do birds swoop? Generally, birds swoop for one of two reasons: to protect their eggs and young during the breeding season and/or to get access to food resources. The aim of swooping is to threaten or bluff, with the intention of warding off intruders from their territory.¹ Many birds exhibit aggressive behaviours intended to drive a potential predator from the location of the nest or chicks.¹ Swooping is a defensive behaviour and a bird will often swoop potential threats aggressively, especially threats to its eggs or young. The bird is acting from an instinct to protect its offspring. Because birds live with the constant threat of predation, this has a significant impact on a bird's lifestyle because it has been shown to influence the choice of nest site, optimal clutch size and various aspects of breeding behaviour.¹ Indeed, predation plays such a large part in determining reproductive success that tactics to mitigate nest losses to predators may be more important than other traits to increase fecundity.

Bird attacks on people represent one of the most prominent human–wildlife conflicts, and birds such as magpies and masked lapwings often respond to humans using anti-predator responses. Birds are not indiscriminate; they can distinguish between different human threats and adjust their defence behaviour to the perceived level of threat.¹ A study published in 2013 by Adam Cardilini and his team at the Centre for Integrative Ecology at Deakin University, Australia, investigated the response of masked lapwings to human stimuli.² The study predicted that lapwings would display higher levels of aggression towards a person pushing a lawnmower than a pedestrian, because the former represents a greater risk to eggs or young. The researchers also predicted that eye stickers on a helmet would reduce, and perhaps effectively mitigate, lapwing swooping. The final prediction was that more aggressive lapwing pairs would experience greater reproductive success, in the form of hatching success.

What did the study find? Masked lapwings responded more aggressively to a person pushing a lawnmower than a pedestrian, with the birds remaining closer to the nest in the presence of a lawnmower. Adding eye stickers on the back of a pedestrian's head decreased the swooping behaviour. Interestingly, when eye stickers were worn by a person pushing a lawnmower, swooping behaviour increased!² We clearly need more research into the behaviour of lapwings.

Another group of birds that are known to mob are native noisy miners. These birds gather in groups to mob with loud repetitive calls, swooping, bill clattering, chasing, attacking or harassing predators, either alone or with other birds.³ One of their most dominant anti-predator strategies is to mob vocally while executing swooping flights. This can be so intense that it sometimes results in injury or death of both the victim and the

would-be attacker.⁴ What about magpies? Magpies are territorial; swooping behaviour plays an important role in deterring predators that may enter their territory.⁵ In collaboration with all other adult species members in their territory, magpies orchestrate well-executed attacks.⁵

Remember, swooping is not designed to attack or even make contact with the individual being swooped. Swooping during flight can also be dangerous for the magpie, because the impact could break its neck. The emphasis of the swoop is on warning.¹ If the recipient of this warning (often a human intruder) responds favourably—that is, takes note of the warning—the magpie male will cease pursuit. If the same person comes past again they will not get swooped.

So what can you do when you are getting swooped? Walk quickly out of the territory, trying not to swing your arms over your head because this will just make the bird more annoyed. If you are on a bike, dismount and walk quickly through the area.⁶ Cable ties on bike helmets can stop the bird from making contact with the helmet, but the bird rarely wants to make contact—swooping is a warning! So please, just give the bird some space and take a different route if needed. Swooping only happens for a few weeks while the female is sitting on the eggs in the nest. Due to a lack of good-quality nesting trees not all magpies get to breed, so those that can want to make sure they do it successfully. One way of doing this is by making sure there are no threats or predators in the area. The magpie is also right—we are often a threat!