Video: Robot dinosaurs show us how flight evolved

Modern birds are believed to have evolved from certain types of dinosaurs, and the transitional species Archaeopteryx sits neatly in the middle. Living about 150 million years ago, this raven-sized creature had an odd mix of avian and reptilian features, sporting feathers and wings but also teeth and a tail. Recent studies have shown that it probably glided, or at most flew in a hopping manner like a pheasant. Others like Anchiornis are thought to have only been capable of gliding.

But a new study suggests that gliding doesn't necessarily need to be an intermediate step towards active flight involving flapping wings. The researchers focused on Caudipteryx, a larger, peacock-sized animal that is the earliest-known non-flying dinosaur to boast a pair of feathered "proto-wings."

Although it couldn't fly, Caudipteryx's wings might have flapped when it ran, which in turn could have led to the eventual evolution of active flight.

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To test it out in the real world, the team then built a life-sized Caudipteryx robot that could run at different speeds on a treadmill. And sure enough, the motion of running caused those wings to flap.

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