

Cheats of the bird world: Cuckoo finches fool host parents

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This is a cuckoo finch chick. Credit: Claire Spottiswoode

Cuckoo finches that lay more than one egg in their victims' nests have a better chance of bamboozling host parents into fostering their parasitic young, a study has found.

Dr Martin Stevens from the University of Exeter and Dr Claire

Spottiswoode from the University of Cambridge, with Dr Jolyon Troscianko at the University of Exeter, demonstrated that when African cuckoo finch females lay more than one egg in the same nest of their African tawny-flanked prinia hosts, the [foster parents](#) find it harder to tell their own eggs from the imposter's.

The host is therefore less likely to reject the parasite's eggs, such that the parasitic chick is raised for free at the host's expense. This helps to explain why female cuckoo finches commonly lay more than one egg in the same host nest.

Host parents often have difficulty in distinguishing parasitic eggs from their own because cuckoo [finches](#) lay eggs that beautifully mimic those of their hosts. Such mimicry has evolved to combat egg rejection by picky parents who remove foreign eggs from their nests.



Cuckoo finch eggs have adapted to different hosts. Credit: Claire Spottiswoode

Egg rejection depends on hosts accurately discriminating parasitic eggs from their own. To do so they must first carry out the sensory task of detecting small differences in egg colours and patterns between their eggs and the parasite's. They must then also correctly identify which eggs are parasitic, to ensure that they don't mistakenly reject any of their own eggs. This is a [cognitive task](#) relying on an ability to process the sensory information and compare it to a memorised template of what their own eggs look like.

The presence of multiple parasite eggs in the nest causes hosts to be uncertain about which eggs belong to them and which are imposters, because these sensory and [cognitive mechanisms](#) conflict with one another.

Dr Stevens said: "Our work shows that by laying multiple eggs in each host nest, the cuckoo finch has evolved a novel strategy, in addition to egg mimicry, to defeat host defences and increase its reproductive success. Laying several [eggs](#) in a host nest causes confusion in host defences, and when combined with effective [mimicry](#), they can outwit the hosts and help more of their young to be reared.



This image shows nestfinders. Credit: Claire Spottiswoode

"In the future it would be great to know whether other brood parasites have similar strategies, and whether there is any way that hosts can fight back in the arms race against the cuckoo finch."

The study, Repeated targeting of the same hosts by a brood parasite compromises host egg [rejection](#), received funding from the BBSRC and has been published in *Nature Communications*.

More information: [dx.doi.org/10.1038/ncomms3475](https://doi.org/10.1038/ncomms3475)

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