

Parents 'more caring' in dangerous environment

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European kestrels alter the levels of care they give their offspring in response to unpredictable environments. Credit: Frank Vassen

Changes in the environment that put the lives of adults at risk drive parents to invest more in caring for their offspring, Oxford University scientists have found.

The new research, led by Oxford University scientists, examined how the mortality rates of parents and offspring and the fertility of adults influence the [evolution](#) of how much parents care for and feed their young.

The team found that unpredictable environments, which impact on adult mortality rates and fertility, increase the benefits to species of evolving a

more caring strategy in which parents invest more resources in bringing up their offspring.

A report of the research is published this week in the *Journal of Evolutionary Biology*.

"We already know that some [animals](#), such as different populations of European kestrel, alter the levels of care they give their offspring in response to unpredictable environments," said Dr. Mike Bonsall of Oxford University's Department of Zoology, an author of the report. "What this new research shows is that many more species are likely to 'hedge their bets', changing how much they care for their offspring depending on how challenging the environment is."

The team set out to investigate how parental care evolved from a state of 'no care' in which [parents](#) leave [offspring](#) to fend for themselves. The researchers used mathematical models to study the costs and benefits of different levels of parental care in unpredictable environments.

Dr. Bonsall said: "People tend to think of parental care as something that is 'hard-wired', that either species care for their young or not, what our research shows is the precarious balance between the costs and benefits of caring which may have caused parental care to have evolved, or been lost, many times in the history of life."

More information: A report of the research, 'The evolution of parental care in stochastic environments', is published online in the *Journal of Evolutionary Biology* on 19 January 2011. The research was conducted by Oxford's Dr. Mike Bonsall and Hope Klug of Yale University.

Provided by Oxford University

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