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Study shows some mammals can influence sex of offspring

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Leopards may never change their spots but some mammals, such as zebras and gazelles, can adjust the sex of their offspring, according to a new study by biologists at the Universities of Edinburgh and Oxford.

A paper published next week shows that some species are capable of producing sons when conditions are conducive to childbearing, and daughters at less favourable times.

Although the characteristic is well known in bees and wasps, the study - to appear in American Naturalist journal next week - is the first to offer conclusive proof of the trait in range of ungulates (herbivorous mammals with hooved feet), including deer and goats.

The idea that red deer could alter the sex of their offspring was first mooted around 30 years ago by the American biologist, Robert Trivers, and gender adjustment in mammals has been fiercely debated by academics ever since. Supporters of the theory argue that it occurs in species in which a few strong males monopolise all of the matings - therefore it is only worth producing a young male if it is going to be a high quality offspring capable of attracting mates.

The new research re-examined all of the studies that have been carried out into sex adjustment in mammals during the past 30 years and sought to explain the apparently contradictory results. The new study has two key findings: the first is that studies with quality data showed a consistent trend in the predicted pattern, with higher quality females producing sons; the second is that this pattern of offspring sex adjustment is more extreme in species where only the biggest males monopolise all the mating opportunities with females.

Dr Stuart West, of the University of Edinburgh's Institute of Cell, Animal & Population Biology, said: "There has been a lot of doubt on this issue for many years, but we've cleared it up by reviewing the vast amounts of data collected over the years. Whilst the physiology that allows this isn't known, it is clear that strong mothers do produce sons."

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