

Females avoid incest by causing male relatives to leave home

Researchers at the University of Sheffield in the UK and Leibniz Institute for Zoo and Wildlife Research (IZW) in Berlin, Germany, have found that female hyenas avoid inbreeding with their male relatives by giving them little choice but to leave their birth group.

Animals generally avoid inbreeding because it is genetically hazardous. They can either do this by moving away from home or, like humans, by learning who their relatives are and not mating with them.

Like most mammals though, male hyenas do not contribute to the rearing of their offspring, making it highly unlikely that females know who their father is. Instead males decide to leave the group in which they were raised, resulting in a low level of inbreeding.

But until now, little was known about why the males and not the females decided to move away from home. The new research on spotted hyenas, published in Nature this week, shows that the reason most males move from their natal group is because of female mate-choice – the rules females use when choosing which of the many male group members will sire their offspring.

The researchers found that young females prefer to mate with ‘new arrivals’ in a group - those males born into, or who joined, the group after the female was born. Older females also apply this rule and in addition prefer males that have built friendly relationships with them for several years. These mate preferences of females mean that males have to choose groups with a high number of young females if they want to reproduce successfully.

The research showed that males usually chose groups with the highest number of young females, giving them access to many females and enabling them to sire a higher number of offspring in the long term. Most males end up dispersing because a higher number of young females usually occurs elsewhere, rather than in the group in which they were raised.

Professor Burke, from the Department of Animal and Plant Sciences at the University of Sheffield, said: “This is the first time a study has shown that in mammal species the system is driven by females using very simple rules to avoid breeding incestuously.”

Dr Oliver Höner from the IZW added: “The results of the study were only possible because we were able to monitor the decisions made by male hyenas in all eight resident hyena groups on the floor of the Ngorongoro Crater. Through this research we could genetically determine paternity for most offspring produced in a 10-year monitoring period.”

Source: University of Sheffield

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