Why do we choose our mates? Ask Charles Darwin, prof says

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Charles Darwin wrote about it 150 years ago: animals don't pick their mates by pure chance - it's a process that is deliberate and involves numerous factors. After decades of examining his work, experts agree that he pretty much scored a scientific bullseye, but a very big question is, "What have we learned since then?" asks a Texas A&M University biologist who has studied Darwin's theories.

Adam Jones, an evolutional biologist who has studied Darwin's work for years, says that Darwin's beliefs about the choice of mates and sexual selection being beyond mere chance have been proven correct, as stated in Darwin's landmark book The Descent of Man, and Selection in Relation to Sex. His work has withstood decades of analysis and scrutiny, as Jones states in his paper, "Mate Choice and Sexual Selection: What Have We Learned Since Darwin?" in the current *Proceedings of the National Academy of Sciences*.

Bottom line: It's no accident that certain peahens submit to gloriously-colored male peacocks, that lions get the females of their choice or that humans spend hours primping to catch the perfect spouses - it's a condition that is ingrained into all creatures and a conscious "choice" is made between the two so the romantic fireworks can begin.

Jones says Darwin set the standard for original thinking about animal reproduction and was first scientist to propose plausible mechanisms of evolution, and from there he took it one step further - he confirmed that animals' mating choices can drive evolutionary change.

"He noticed that birds, especially, seemed to be a bit picky about who they mated with," Jones explains. "He discovered that birds - especially females - had preferences and that they did not just choose a mate randomly. He believed this is due to beauty of the plumage, that females usually selected the most colorful males.

"That was an important first step, and it's given us models to work from to try to answer other big questions."

Those include determining methods to find out the actual criteria used in choosing a mate, what methods work and which do not, and the passing of genes on to the next generation, a field of study Jones says gained popularity in the 1970s and 1980s.

"Another big recent advance was the development of molecular markers, which allow us to perform paternity testing," Jones adds.

"These markers can be applied to animal populations, and they give us a definitive record of who is mating with whom and what offspring resulted from the mating events. And also, what is the driving force behind sexual selection? We have an unprecedented ability to document mating patterns but we still don't completely understand why some populations experience strong sexual selection and others don't."

Jones notes that other key questions Darwin's work uncovered but has not yet answered include the role of population characteristics and the environment and how they work together to produce strong sexual selection, and also what determines whether or not female choice will evolve in a particular species.

And perhaps the biggest question of all: How does all of this pertain to humans?

"Darwin concluded that sexual selection existed in the animal world and that humans definitely followed a similar process," Jones confirms.

"But he realized he had to explain it first as it related to animals. Darwin thought that sexual selection was an important process in humans, both for males and females. But how much has sexual selection acted on males versus females in humans? Today, while we are celebrating the 200th year of the birth of Charles Darwin, we know sexual selection occurs and is very important but there are still many unanswered questions about precisely why and how it works, especially in humans."

Source: Texas A&M University