

It takes two to tango: Beetles are equal partners in mating behavior

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Beetles that copulate with the same mate as opposed to different partners will repeat the same behaviour, debunking previous suggestions that one sex exerts control over the other in copulation, new research has found.

Entomologists from the University of Lincoln, UK, examined the [mating behaviour](#) of *Callosobruchus maculatus* beetles - more commonly known as [seed beetles](#) - to determine if either sex controlled the duration of copulation.

During mating, kicking by the female is the only way it can force the male to disengage its spiny genitalia which punctures the female's reproductive tract. The study found that when beetles repeatedly mated with the same partner, the amount of time it took for the female to begin kicking the male, and how long she spent kicking, was virtually the same.

However, when mated to different partners, the duration of both the time it took to begin kicking and how long the female kicked for varied considerably.

Dr Paul Eady from the University of Lincoln's School of Life Sciences led the study. He said: "Across the animal kingdom the duration of copulation varies enormously from a few seconds to several days, and it has traditionally been seen as a cooperative venture between males and [females](#) to facilitate the transfer of sperm.

"However, recent studies indicate that copulation might actually

represent an uneasy alliance in which male and female interests are in conflict, which has led to a number of researchers examining which sex controls copulatory behaviour.

"Teasing apart male and female influences over the duration of mating is difficult because although males may have more to gain, females are often in a position to exert more control.

"We used a very simple experimental protocol that examined the repeatability of male and female copulatory behaviour in the beetle, *Callosobruchus maculatus*. When males mated to several females and when females mated to several males, the copulatory behaviour of individuals was inconsistent. This suggests both [males](#) and females have a degree of control over the [duration](#) of copulation.

"This was confirmed when male-female pairs were permitted to copulate several times in succession, and the behaviour was highly repeatable. This tells us that copulatory behaviour is a product of male-female interactions, rather than one sex exerting control over the other."

The findings have been published in the *Royal Society Open Science* today (Wednesday 22nd February).

More information: Male-female interactions drive the (un)repeatability of copula duration in an insect, *Royal Society Open Science*, [rsos.royalsocietypublishing.org ... /10.1098/rsos.160962](https://rsos.royalsocietypublishing.org/.../10.1098/rsos.160962)

Provided by University of Lincoln

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