

Study suggests genetic basis for same-sex sexual behavior offers evolutionary advantage

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Drosophila sp fly. Credit: Muhammad Mahdi Karim / Wikipedia. GNU Free Documentation License, Version 1.2

(Phys.org)—A trio of researchers with the University of St. Andrews in the U.K. has found what appears to be an evolutionary advantage for same-sex sexual behavior in fruit flies. In their paper published in *Proceedings of the Royal Society B*, Jessica Hoskins, Michael Ritchie and

Nathan Bailey describe their research with the flies and what they found by doing so.

Scientists have insisted for years that despite the seeming paradox, there must be an [evolutionary advantage](#) for same-sex sexual behavior (SSB)—if there weren't, the behavior would disappear due to [natural selection](#), but thus far, they haven't been able to find it. In this new effort, the researchers describe experiments they carried out with [fruit flies](#) that led to evidence of just such an advantage.

In their study, the team began with the assumption that prior research has suggested that a possible evolutionary advantage might be related to over-dominance and sexual antagonism—they carried out 2,320 behavioral trials, which consisted of putting flies together in a container and watching how they behaved with one another, most specifically recording instances of licking, singing and abdomen curling (attempts at mounting) of both opposite gender and same gender male flies under a variety of conditions, such as changes in temperature, degree of inbreeding in a line, etc.

In analyzing all the data they had amassed, the team noted one factor that stood out, males passing on a [genetic factor](#) to females resulting in increased fecundity (rate of producing healthy offspring). More specifically, they found that males with a family tree full of males exhibiting SSB tendencies tended to cause an increase in fertility rates when they mated with females. The team did not search for the genes they believe are responsible for the genetic factor, but insist their study suggests that a genetic mechanism exists that allows for the maintenance of persistent (and low) levels of SSB in the fruit flies they studied. They also suggest their work highlights the need for more research on SSB in other creatures besides humans—they noted that they were able to find just one other study that had looked into finding a genetic reason for SSB persistence in any other species.

More information: A test of genetic models for the evolutionary maintenance of same-sex sexual behaviour, Published 27 May 2015.
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