

The sexual tug-of-war -- a genomic view

March 15 2010

The genes that are most beneficial to males are the most disadvantageous for females, and vice versa. However, this genetic conflict between the sexes is important in maintaining genetic variation within a species, researchers at Uppsala University have shown in a study on fruit-flies published in the open access journal *PLoS Biology*.

Males and females of many species often look quite different from one another. These differences are thought to have evolved because the sexes often have needs and strategies that do not coincide. For example, in fruit-flies, females may do best by concentrating their efforts in acquiring resources to lay more eggs, while males benefit by increasing their mating and fertilization success.

Such differences generate a sexual "conflict of interests," and since as a general rule each characteristic of an organism is regulated by the same set of genes in the two sexes, this conflict takes place at the genetic level. Using a combination of behavioral studies and genomic technology, researchers Paolo Innocenti and Ted Morrow have succeeded in getting a first insight into which genes are influenced by this type of sexual conflict.

"Our study shows that genes whose expression is beneficial to males are also detrimental to females, and vice versa," says Ted Morrow who led the study.

Their work also shows where in the [genome](#) these sexual conflict [genes](#) are, and that they are abundant in the sex-determining X-chromosome,

something previously predicted by theory. These results indicate that a [genotype](#) that is optimal for both sexes does not exist.

More information: Innocenti P, Morrow EH (2010) The Sexually Antagonistic Genes of *Drosophila melanogaster*. PLoS Biol 8(3): e1000335. [doi:10.1371/journal.pbio.1000335](https://doi.org/10.1371/journal.pbio.1000335)

Provided by Public Library of Science

Citation: The sexual tug-of-war -- a genomic view (2010, March 15) retrieved 2 May 2024 from <https://phys.org/news/2010-03-sexual-tug-of-war-genomic-view.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--