Title:	Reproductive Isolation through Experimental Manipulation of Sexually Antagonistic Coevolution in Drosophila melanogaster
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Abstract:	Promiscuity can drive the evolution of sexual conflict before and after mating occurs. Post mating, the male ejaculate can selfishly manipulate female physiology, leading to a chemical arms race between the sexes. Theory suggests that drift and sexually antagonistic coevolution can cause allopatric populations to evolve different chemical interactions between the sexes, thereby leading to postmating reproductive barriers and speciation. There is, however, little empirical evidence supporting this form of speciation. We tested this theory by creating an experimental evolutionary model of Drosophila melanogaster populations undergoing different levels of interlocus sexual conflict. We found that allopatric populations under elevated sexual conflict show assortative mating, indicating premating reproductive isolation. Further, these allopatric populations also show reduced copulation duration and sperm defense ability when mating happens between individuals across populations compared to that within the same population, indicating postmating prezygotic isolation. Sexual conflict can cause reproductive isolation in allopatric populations through the coevolution of chemical (postmating prezygotic) as well as behavioural (premating) interactions between the sexes. Thus, to our knowledge, we provide the first comprehensive evidence of postmating (as well as premating) reproductive isolation due to sexual conflict.
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