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Title:	X and Sex:
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Abstract:	<p>Males and females often have different fitness optima for many shared traits but are unable to achieve these optima because of the constraint of a shared genome. This leads to the accumulation of sexually antagonistic variation (SAV) in a population that favours one sex and is detrimental to the other. Theory predicts that such sexually antagonistic variation is most likely to be present on the X chromosome (in an XY mating system). Various empirical studies have tested this prediction in many systems and have produced mixed results. In this study, we first investigated if there was any X linked SAV in a laboratory-adapted baseline population of Drosophila melanogaster. We then explored how the degree of sexual antagonism varied in populations evolved under increased and decreased levels of sexual conflict. For this, we used a population of D. melanogaster that is subjected to the selection pressure of a male-biased or female-biased sex ratio every generation. We isolated 25 random X chromosomes from males of all three replicates of each selection regime and expressed them in random autosomal backgrounds. We then performed fitness assays on males and females expressing these X chromosomes. We looked at the genetic correlation of fitness between the sexes to comment on the degree of sexual antagonism. We did not find evidence of X-linked sexual antagonism in our populations. We also found that the X chromosome did not contribute significantly to the fitness differences between individuals from the two selection regimes. Our results add to a growing body of work that suggests that the X chromosome may not be a hot-spot for sexually antagonistic variation and it may be worthwhile to explore other parts of the genome and their interactions.</p>
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