TAGC/PopGroup53 abstract

Conflict arising as a consequence of opposing fitness optima between the sexes is recognized as a driver of sex chromosome evolution, with suppression of recombination often being observed as a way to resolve this phenomenon known as sexual antagonism. However, how this conflict plays out in the face of biases in the operational sex ratio (OSR) for finite populations has not been described. These biases in OSR can occur as a result of a variety of processes such as differential mortality, reproductive rate, manipulation of the sex of individual at birth to name a few.

Here we investigate whether these biases in OSR can produce instances where selection acts on one sex***,*** while genetic drift acts on the other***,*** leading to disproportionate effects on the allele frequencies at a sexually antagonistic locus. In this model***,*** we demonstrate how OSR bias, genetic architecture, the strength of selection, and recombination distance interact to create these patterns in finite populations.