

**Table S3: Bias from epistasis when fitting an additive model does not depend on mean kinship of sample**

$K_0$	1/240	1/120	1/60	1/30
$\hat{v}_1$	0.41	0.41	0.41	0.41

The mean estimates of the additive variance,  $v_1$ , for populations with different mean kinship,  $K_0$ . The true value of  $v_1$  is 0.4. The variance from pairwise interactions,  $v_2$ , is 0.2, leading to a slight upward bias in the estimates of  $v_1$ . The bias does not depend on the mean kinship for these populations.