

More than two loci

- Genotypic value is influenced by an unknown number of loci: A, B, C, \dots
- All loci are assumed to be bi-allelic
- Decomposition of V :
$$V = V_A + V_B + V_C + \dots + I_{ABC}$$

• Single locus

$$V_{A_i A_j} = \mu_A + BV_{A_i A_j} + DV_{A_i A_j}$$

$$V_{B_i B_j} =$$

$$V_{C_i C_j} =$$

...

• Collect:

$$V = \mu_A + BV_{A_i A_j} + DV_{A_i A_j} + \mu_B + BV_{B_i B_j} + DV_{B_i B_j} + \mu_C + BV_{C_i C_j} + DV_{C_i C_j} + \dots + I_{ABC}$$

$$\begin{aligned} &= \mu_A + \mu_B + \mu_C + \dots + BV_{A_i A_j} + BV_{B_i B_j} + BV_{C_i C_j} + \dots + DV_{A_i A_j} + DV_{B_i B_j} + DV_{C_i C_j} + \dots + I_{ABC} \\ &= \mu + BV + D + I_{ABC} \end{aligned}$$