



FIGURE 14.16. The additive genetic variance can be estimated from the covariance between parent and offspring. The offspring carries one genome from the father (*blue*) and one from the mother (*red*); these contribute A_1 and A_2 to the breeding value, respectively. The covariance between father and offspring depends on only the genes that they share (*blue*), and so is equal to $\text{var}(A_1)$.